

2022 FOREST ACTION PLAN ANNUAL REPORT

Taking actions to restore,
manage and conserve
Washington's forests so
our environment and
communities thrive.



**NATURAL
RESOURCES**

HILARY S. FRANZ
COMMISSIONER OF PUBLIC LANDS



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PHOTO CREDITS

All photos from Washington DNR archives unless otherwise noted: Cover photos (clockwise from top left): DNR firefighter at Old Naches fire; staff member from the Confederated Tribes of the Colville Reservation actively builds a beaver dam analog (photo courtesy the Confederated Tribes of the Colville Reservation); aerial view from forested landscape affected by the Schneider Springs fire (photo by Derek Churchill); DNR Service Forestry Coordinator Rachel Mazzacavallo assesses a stand during a field visit.



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RYAN RODRICK



The Washington State Department of Natural Resources resumed prescribed burning on state trust lands in 2022 after a decade-long pause



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WASHINGTON STATE DEPT OF
**NATURAL
RESOURCES**

HILARY S. FRANZ
COMMISSIONER OF PUBLIC LANDS

Introduction

Washington's Forest Action Plan was revised and adopted on October 26, 2020. The Forest Action Plan is a comprehensive review of forests across all lands — public and private, rural and urban — and offers proactive solutions to conserve, protect, and enhance the trees and forests that people and wildlife depend on.

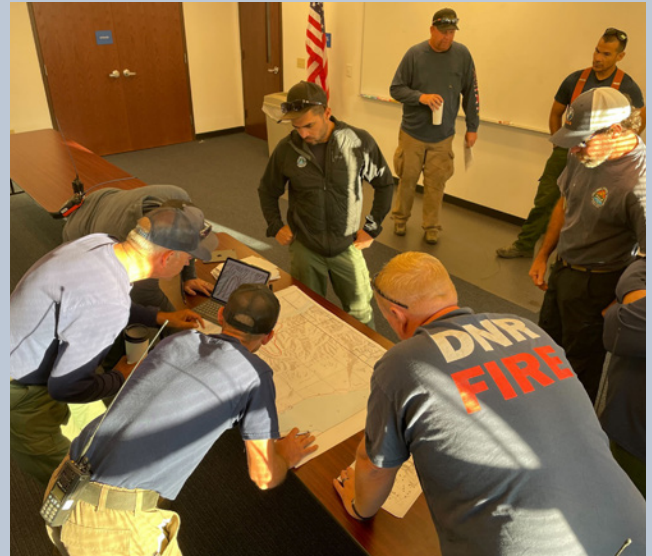
At a time when our response to the COVID-19 pandemic was constantly evolving, the Washington Department of Natural Resources (DNR) and our partners contributed and collaborated to develop an ambitious statewide plan. This plan identifies 23 goals and 159 priority actions across eight themes to restore forest resilience. The plan also aims to advance shared objectives around ecologic improvement, strong local economies, and community resiliency.

The plan also made a firm, collective commitment to monitor progress made by individual organizations and through partnerships, as well as to share successes and lessons learned along the way.

This is the second annual report published since 2020. As in 2021, we were able to adapt to the global pandemic to still communicate, collaborate, and implement projects across our state's forests. We continued to make progress on many of our goals and priority actions. Throughout this report, we've connected report sections, success stories, sidebars, and graphics to the specific Forest Action Plan goals or priority actions we are on our way to meeting or exceeding.

We are confident in saying over the past two years that we have validated an assumption built into the plan's development: collaboration is a particular key to success. No one partner can do this work in silo, and the cooperative efforts of our tribal nations, non-profit organizations, state, county, and federal agencies are vital. Following years of coordination around forest health and resilience investments, 2022 marked the first time the Washington Department of Fish and Wildlife (DFW), Washington State Parks, the Washington State Conservation Commission (SCC), and DNR submitted a single, unified budget package.

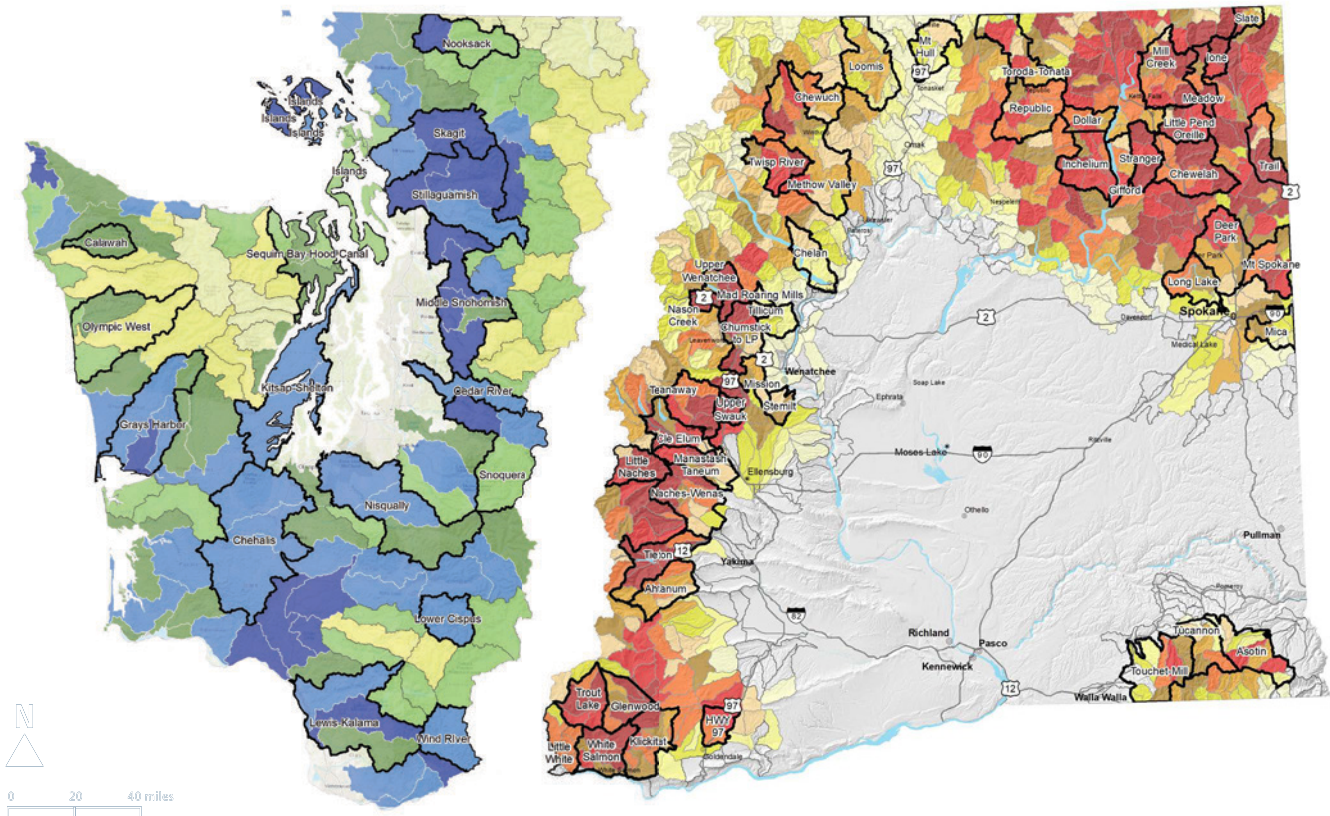
Our continued commitment to coordination recognizes both the need to work in concert on complex forest issues and the unique strengths of each agency tasked with addressing them. New partnerships formed in 2022 included an interagency agreement between DNR and DFW in support of prescribed fire and forest health.



NEW PARTNERSHIPS FORMED IN 2022 INCLUDED AN INTERAGENCY AGREEMENT BETWEEN DNR AND DFW IN SUPPORT OF PRESCRIBED FIRE AND FOREST HEALTH.

We expect to finalize additional partnerships in 2023, including a master agreement between DNR and SCC to facilitate stronger delivery of community resilience and forest restoration objectives. The two agencies will utilize the network of conservation districts across the state to execute this agreement. These agreements solidify our coordination to deliver projects and services more efficiently and effectively.

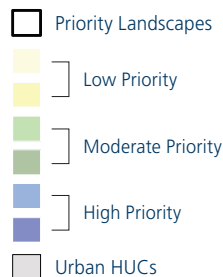
The pioneering work of Washington, as guided by our Forest Action Plan, has garnered recognition from neighboring states and at the national level. Washington hosted the 2022 National Association of State Foresters meeting in the Columbia River Gorge, as well as a gathering of the Wildland Fire Leadership Council in Spokane. Leaders from across the country were able to hear from Washington's natural resource practitioners and see incredible all-lands, all-hands work firsthand.



WESTERN WASHINGTON FOREST HEALTH PRIORITY LANDSCAPES AND HUC 6 WATERSHED PRIORITIZATION

FALL UPDATED FALL 2021

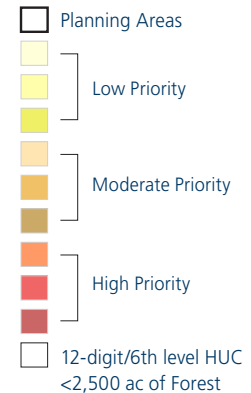
DNR and partners selected priority landscapes to focus implementation of Shared Stewardship Investment Strategy and forest health and resilience work in western Washington. The selection was based on an analysis of 12 different data layers, such as fish and wildlife, drinking water, climate change, and timber production and consideration of local priorities. Each of these priority landscapes face a unique set of threats and challenges that will require collaboration and coordination among partners. For a full description of the methodological approach and data sets used in the western Washington Landscape Resilience effort please see the 2020 Forest Action Plan.



EASTERN WASHINGTON FOREST HEALTH PRIORITY PLANNING AREAS AND HUC 6 WATERSHED PRIORITIZATION

FALL 2022

As of fall 2022, DNR and partners selected 47 forest health priority planning areas to implement the 20-Year Forest Health Strategic Plan: Eastern Washington. Priority planning areas were selected based on a data-driven forest health prioritization conducted at the HUC 6 watershed level and consideration of local priorities. For a full description of eastern Washington forest health prioritization, assessments, goals, strategies and actions please see the 2018, 2020 and 2022 Forest Health Assessment and Treatment Framework Reports and the 20-Year Forest Health Strategic Plan: Eastern Washington.



Highlighted Forest Action Plan Priority Action: Conduct landscape evaluations that use the best available science and tools to prioritize and design forest health treatments to improve forest conditions, enhance ecosystem values across landscapes, and reduce risk to communities and infrastructure as described in House Bill 1784.

State and Federal Legislation Give Much-Needed Boost to Forest Health



Highlighted Forest Action Plan Priority Action:

Dedicate a portion of pass-through grant funding to facilitate implementation of projects and programming that address environmental health disparities in communities of greatest need.

Funding from legislation passed in 2021 by the Washington State Legislature – most notably House Bills 1168 and 1216 – spurred the growth or creation of numerous DNR programs. Because of HB 1216, DNR's Urban and Community Forestry program was able to provide an historic level of dollars to partners and communities across the state. More than \$550,000 was awarded to 21 organizations to support the health and resiliency of urban and community forests. For more on this, please see the Urban and Community Forest Resiliency section of this report.

Funding from HB1168 helped to expand the reach and capacity of DNR services and pass-through funding efforts to benefit Washington's forests and communities. Notable growth points included expansion of integrated landowner support resources provided via the Service Forestry Program and the Small Forest Landowner Office, as well as the establishment of a Community Resiliency Program.

Legislation also helped advance Forest Action Plan goals and priority actions related to environmental justice. Passed in 2021, Senate Bill 5141 provides direction for state government agencies to address environmental justice and equity.

Known as the Healthy Environments for All, or HEAL Act, SB 5141 requires the Departments of Ecology, Natural Resources, Health, Commerce, Transportation, and Agriculture, as well as the Puget Sound Partnership, to take specific actions to promote environmental justice in their work. It requires equity-focused funding allocations and agency-level action assessment tools. Progress has been made to highlight the intersection and overlap between environmental justice and forest resiliency, building the foundation and understanding for more work to come.

New federal sources of financial support have helped boost efforts related to forest health work. The Infrastructure and Jobs Act, which made investments in communities to make them safer, more climate resilient and technologically advanced, provided nearly \$3 billion for hazardous fuels reduction across the United States. To help prioritize work, the USDA Forest Service (USFS) announced that the Central Washington Initiative was one of 10 landscapes selected nationally to help implement its 10-Year Wildfire Crisis Strategy and direct infrastructure funding.





**WORKING
ACROSS ALL LANDS
TO ENSURE FORESTED
ECOSYSTEMS
AND THE HUMAN
AND WILDLIFE
COMMUNITY THEY
SUPPORT RETAIN
THEIR RESILIENCE TO
DISTURBANCE.**

FOREST ACTION PLAN STRATEGIES

This report highlights accomplishments, updates, and successes across the eight themes. Each theme includes a subset of goals and priority actions. The eight themes are:

- Landscape Resilience
- Community Wildfire Preparedness and Wildfire Suppression
- Keeping Forests As Forests
- Urban and Community Forest Resilience
- Rural Economic Development
- Stewardship of Family and Working Forests
- Wildlife and Salmon Recovery
- Water Quality and Quantity

This annual report contains a sampling of the many accomplishments and amazing work completed this year, but serves as only one measure of our forward momentum. Additional stories, case studies, and statistics regarding recent work to increase our understanding and improve the health and resilience of Washington's forests can be found in the Forest Health Treatment Prioritization and Implementation Report, the Forest Health Assessment and Treatment Framework biennium report, and our 2021 annual Forest Health Highlights report.



Cooperative Forestry Programs

Highlighted Forest Action Plan Priority Action: Respect the management responsibilities and trust mandates on federal and state lands. Support sustainable forestry on industrial and private forestland.

Congress passed the Cooperative Forestry Assistance Act in 1978. The act was designed to mitigate threats facing forests and empower the USDA Forest Service to partner with state forestry agencies.

The Forest Action Plan enables Washington State to receive funding from the USDA Forest Service's State and Private Forestry Programs, often referred to as cooperative forestry.

The Forest Service is a critical partner in addressing threats facing forests in Washington. The Forest Service's State and Private Forestry Program established three overarching goals to guide our state and federal partnership:

- Conserve and manage working forest landscapes for multiple values and uses.
- Protect forests from threats.
- Enhance public benefits from trees and forests.

These overarching goals – combined with DNR's strategic direction as described in the Shared Stewardship Investment Strategy, 2020 State Forest Action Plan, 20-Year Forest Health Strategic Plan: Central and Eastern Washington, and 10-Year Wildland Fire Protection Strategic Plan – guide program, state, and federal investments across Washington.

There are eight cooperative forestry programs funded by the Forest Service and administered through DNR:

- Community Forest and Open Space Conservation Program
- Forest Legacy Program
- Urban and Community Forestry Program
- Forest Health Protection
- Forest Stewardship
- Landscape Scale Restoration
- State Fire Assistance
- Volunteer Fire Assistance

The financial assistance provided because of these programs enables a suite of important actions across public and private forestlands including tree planting in urban centers, community preparedness for wildfires, and the permanent conservation of forestlands at risk of development.



Members of the Washington Environmental Justice Task Force pose for a photo with Governor Jay Inslee at the 2021 signing of the HEAL Act.

WA ENVIRONMENTAL JUSTICE TASK FORCE

Environmental Justice and Forest Resilience

Highlighted Forest Action Plan Priority Action: Work with partners, including landowners, agencies, tribes, forest collaboratives, conservation districts, and landowners to build social license, address barriers, and leverage resources to enhance forest health and resilience through active management practices

Environmental justice requires fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, rules, and policies.

Environmental justice manifests in the following ways: addressing disproportionate environmental health impacts in all laws, rules, and policies with environmental impacts; prioritizing vulnerable populations and overburdened communities; equitable distribution of resources and benefits; and eliminating harm.

After nearly a year of formal work examining how environmental justice intersects with forest resilience, it has become clear that one cannot exist without the other: truly sustainable forest resilience can only occur when environmental equity and justice are present in the leadership, coordination, management, and stewardship of forest decisions.

It will take years, if not decades, to complete the process of comprehensively defining environmental justice and forest health in tandem with individuals and communities historically left out of forest health decision-making. DNR's Forest Resilience Division is developing an environmental justice implementation plan to integrate with our Forest Action Plan. This living, evolving implementation plan will be revised alongside our state Forest Action Plan in 2025. Initial goals and objectives to integrate environmental justice and forest resilience include:

VULNERABLE INDIVIDUALS AND FAMILIES GET RELIEF VIA AIR FILTER DISTRIBUTION

Highlighted Forest Action Plan Priority Action:

Increase public awareness of risks post-wildland fire and facilitate access to resources to mitigate those risks.



Communities across Washington suffered smoke impacts during the 2022 wildfire season, sometimes

for weeks or months at a time. Wildfire smoke can be particularly hazardous to people with chronic respiratory or other medical conditions that already place limits on their day-to-day activities.

To help serve some of those residents, several partners across the state helped deliver HEPA air purifiers and box-fan filter kits to high-need individuals in Yakima, Pend Oreille, and Spokane counties. In Yakima County, Shelters, youth housing, and respite rooms received 147 HEPA air filters for homeless or under-housed individuals.

MEDIFY AIR



Indigenous, Latino, and mobility-challenged households in Spokane and Pend Oreille counties received 30 HEPA air purifiers and 211 box-fan filter kits. These efforts wouldn't have been possible without the help from local partners: the Kalispel Tribe, Spokane Meals on Wheels, Latinos en Spokane, Yakima County Department of Human Services, Northwest Community Action Center, and the Opportunities Industrialization Center.

- Increasing the number and quality of partnerships with people and communities of color, historically underserved communities, and communities that are highly impacted by environmental injustices
- Increasing the accessibility of programs and services for communities and individuals who communicate in languages other than English
- Hosting regular trainings for DNR employees on various environmental justice topics to increase understanding of our workforce, mitigate potential impacts, and improve conditions
- Completing regular environmental justice reviews and updates to division policies, directives, and programs.

The 2020 Forest Action Plan outlines a number of goals for how to make tangible progress on forest health challenges. Amending and updating these goals to include environmental justice objectives will be a continual work in progress for both DNR and its many partners. Blind spots will continue to be uncovered. New relationships and partnerships will need to be built. We have a lot of work to do in order to achieve just involvement and consideration of all people impacted by Washington's forests. Highlights of progress made at the program level include:

- Nearly 400 HEPA air filters and box fan filter kits were distributed in Yakima and Spokane counties during the 2022 wildfire season to families and individuals in need to help provide clean air spaces in their homes and shelters (see sidebar).
- This year's Urban Forestry Symposium's topic was, "Restoring Ancestral Stewardship with Community & Our Urban Forests." The event, held at the University of Washington's wətəb?altx Intellectual House, focused on Indigenous access, management, and stewardship of what are now urban areas in Washington State.
- Municipalities and communities across Washington that face outsized environmental health disparities received more than \$200,000 in DNR funding to help improve tree canopy cover, improve existing tree health, and provide education and training opportunities.
- Confederated Tribes of the Colville Reservation and DNR developed the first jointly held forest health priority landscape in 2022.
- The Natural Resources Division of the Kalispel Tribe completed a forest health treatment on their Indian Creek Community Forest using DNR funding from HB 1168. They will use the area for tribal youth education and engagement activities.
- DNR staff made key documents more accessible by being translated into Spanish and being edited to include text for visually-impaired readers.
- DNR organized and hosted the "What Makes a Just Forest?" speaker series on environmental justice. It featured presentations from experts on environmental justice history and philosophy, Latine forest workers' rights, indigenous land stewardship, first foods and medicines, and equity in forest resilience. To view recordings from the speaker series, visit: <http://bitly.ws/BF6Q>.





DEREK CHURCHILL



Aerial view of a section of forest with high severity (left), and low severity (right) road conditions following the Schneider Springs Fire.



DNR AND OUR PARTNERS HAVE REPORTED 493,460 ACRES OF FOREST HEALTH TREATMENTS ACROSS EASTERN WASHINGTON SINCE THE 20-YEAR FOREST HEALTH STRATEGIC PLAN'S ADOPTION IN 2017, IMPACTING 309,556 FOOTPRINT ACRES.

LANDSCAPE RESILIENCE

Landscape resilience refers to the ability of a landscape to sustain desired ecological functions, robust native biodiversity, and critical landscape processes over time and under changing conditions. Increasing resilience requires partnerships across ownership and jurisdictional boundaries — no one land manager can achieve landscape and watershed resilience alone.

Those partnerships grew stronger over the past year, thanks in large part to support from HB 1168. The Service Forestry Program at DNR added staff and expanded to Western Washington. Additionally, funds from the federal Infrastructure Bill helped support a number of forest health-related endeavors in our state.

// Together with partners, we will plan and implement projects at a scale needed to address the risk of large, destructive fires which are so impactful to our communities. I'm excited to begin this important work [Central Washington Initiative and 10-Year Wildfire Crisis Strategy] to increase the pace of restoring our fire-adapted landscapes."

KRISTIN BAIL
Okanogan-Wenatchee
Forest Supervisor



Forest Health Assessment and Treatment Framework

DNR's Progress Report Provided to the Washington State Legislature on December 1, 2022

Highlighted Forest Action Plan Priority Action: Conduct landscape evaluations that use the best available science and tools to prioritize and design forest health treatments to improve forest conditions, enhance ecosystem values across landscapes, and reduce risk to communities and infrastructure as described in House Bill 1784.

Forest ecosystems, as evidenced by recent wildfire seasons, are facing significant threats. Climate change is shifting precipitation patterns, increasing the rate and intensity of severe weather events. Drought is leading to tree die-off, increasing forest susceptibility to insect and disease outbreaks. Invasive species are threatening native plants and wildlife habitat. An increase in severe wildfires is endangering communities, while damaging our forests and infrastructure. The Washington State Legislature has recognized that our forests face unprecedented threats that require bold action, and provided direction and resources over several biennia.

RCW 76.06.200 requires DNR “to proactively and systematically address the forest health issues” and to assess, treat, and track progress. Washington Department of Natural Resources, in close coordination with our partners in shared stewardship, is working strategically to tackle our wildfire and forest health crisis at the pace and scale it demands. The submission of the biennial legislative report marks the fifth anniversary of the release of the 20-Year Forest Health Strategic Plan: Central and Eastern Washington. The 20-Year Forest Health Strategic Plan is integrated into our statewide Forest Action Plan and is the framework focusing and directing implementation of the forest health assessment and treatment framework required by RCW 76.06.200. This executive summary provides an overview of the state’s progress to create resilient forests through fulfillment of RCW 76.06.200. The full report can be found [here](#).

DNR and our partners have made significant progress. Highlighted accomplishments since our December 1, 2020 report include:

- Assessment of forest conditions to quantify forest restoration and management needs across 37 priority landscapes covering 4,165,780 acres in eastern Washington. This greatly exceeds the statutory requirement of analyzing 200,000 acres of fire-prone land each biennium.
- Presentation of new landscape evaluation summaries for 8 priority landscapes, providing a scientifically grounded blueprint of forest health treatment need and scale. Landowners can use these evaluations on a voluntary basis to improve their forests, and DNR can use them to track benchmarks and progress across each landscape.
- A commitment by DNR to analyze 10 more priority landscapes next biennium, representing an additional 1,108,883 acres. This expands our footprint to focus DNR resources on implementing the forest health plan with partners across 47 total priority landscapes totaling more than 5.2 million acres.
- Increase in the number and diversity of partnerships, leading to a corresponding increase in the size and complexity of forest health projects and wildfire risk reduction activities being planned and implemented across the state.
- Landowners invested significant resources to accelerate implementation of forest health treatments. DNR and our partners have reported 493,460 acres of forest health treatments across eastern Washington since the plan’s adoption in 2017, impacting 309,556 footprint acres.
- Cutting-edge forest health monitoring, led by DNR scientists, to track progress toward our goals while monitoring the effectiveness of forest health treatments in the face of wildfire, drought, and insects and disease.

Reducing the impact of wildfires on values at risk, such as homes, timber resources, drinking water, critical habitat, and infrastructure requires not only investments in healthy forest landscapes, but also fuel breaks, defensible space, and home hardening. DNR published a whitepaper in January 2022 entitled, [The Role of Shaded Fuel Breaks in Support of Washington’s 20-Year Forest Health Strategic Plan](#). The paper summarizes key findings from the scientific literature and makes recommendations to guide integrated implementation of fuel breaks with landscape-scale forest health treatment activities. Fuel breaks are not a replacement for landscape-scale restoration. Both will be required to effectively reduce wildfire risk.



LANDSCAPE RESILIENCE



Photos from a prescribed fire on the Ramsey Unit. The burn was conducted in 2021 after the Cub Creek Fire went through this area. The goal of the burn was to reduce 2018 commercial harvest debris, as well as enhance forage opportunities for wildlife.



Historic investments in forest resilience and wildfire risk reduction have been made by Washington State and our federal partners over the last two years. The Washington State Legislature adopted second substitute House Bill 1168 in 2021, which established the Wildfire Response, Forest Restoration, and Community Resilience account. The legislation provided an initial \$125 million for the 2021-2023 biennium to implement the state's forest health and wildfire strategic plans as well as a commitment to continue this level of funding over the next four biennia.

The federal government passed the Bipartisan Infrastructure Investment and Jobs Act, which was signed into law in November 2021. That legislation invests more than \$3 billion in hazardous fuels treatments across the country. The USDA Forest Service announced the national 10-Year Strategy to Confront the Wildfire Crisis in January 2022, which was followed by a commitment to direct resources in four counties east of the Cascades through the Central Washington Initiative.

These state and federal investments, and the additional resources they leverage, are vital to delivering on our strategic plans and legislative direction to increase the health, vibrancy, and resilience of our state's forests and communities today and into the future.

Released in 2017, the 20-Year Forest Health Strategic Plan laid the foundation and catalyzed action to increase the health and resilience of Washington's fire prone forests and communities at the pace and scale of the threats facing them. Tremendous progress has been made in the past five years, but looking ahead, there is no doubt about the work still to be done. DNR remains committed to completing the 20-Year Forest Health Strategic Plan. With strong legislative, scientific, and collaborative support, we will meet and exceed our shared goals.



The entire report can be found here:

**[dnr.wa.gov/sites/default/files/publications/
rp_forest_health_treatment_framework
assessment_legislative_report_final.pdf](https://dnr.wa.gov/sites/default/files/publications/rp_forest_health_treatment_framework_assessment_legislative_report_final.pdf)**

State Agency Forest Health Investments: Washington State Parks and Department for Fish and Wildlife

Highlighted Forest Action Plan Priority Action: In priority landscapes, work with landowners, conservation districts, fire districts, partner organizations, and agencies to coordinate activities across borders and select the most effective treatment approaches to meet the needs of the landscape and landowner objectives.

Forest health is an all-lands, all-hands effort. Below are highlights of projects led by Washington State Parks and Washington Department of Fish and Wildlife to improve forest health and resilience:

Washington State Parks

Washington State Parks manages one of the most popular and robust state park systems in the nation. Nearly 40 million people annually visit the more than 124 parks across the state.

Located minutes outside of Spokane, Riverside State Park encompasses 9,185 acres of activities ranging from camping and fishing to rock climbing and river rafting. The second-biggest state park in Washington, Riverside is almost entirely inside the region's wildland-urban interface. Portions of the park have a high potential for both surface and crown fires.

In response, crews performed non-commercial thinning of 288 acres of the Trautman Ranch Conservation Area within the park, which wrapped up in early 2022.

During the summer of 2022, State Parks implemented an 88-acre upland thinning project on the Bullfrog property east of Cle Elum. The property includes a portion of the 250-mile Palouse to Cascades State Park Trail, and is bordered by the Yakima River. Bullfrog is a historic floodplain, and serves as a channel migration zone for the river. The thinning reduced fire risk in the area, supported the current floodplain function, and improved overall forest health.

RESILIENT FORESTRY



Before and After Photos of Palouse to Cascades State Park near Interstate 90 to reduce overstocking, restore forest health, and reduce wildfire risk.



LANDSCAPE RESILIENCE

Washington Department of Fish and Wildlife

The Washington Department of Fish and Wildlife manages 33 wildlife areas across the state. These landscapes support wildlife habitat, recreation, preserve ecosystems and conserve natural resources.

The Swakane Unit in Chelan County includes Burch Mountain, Tenas George Canyon, and Swakane Canyon. More than 100 bird species have been observed at Burch Mountain, which is also important seasonal habitat for mule deer. It includes a wide swath of dry forest, much of which is in need of biomass removal.

More than 100 acres of proposed thinning work on the Burch Mountain portion of the unit had to be postponed in 2021 due to the Red Apple Fire. After high-severity wildfire burned through 20 percent of the project, the remaining 90 acres were thinned to remove approximately 1800 tons of biomass. Treatments will shift species composition to favor resiliency.

Working collaboratively across boundaries through shared stewardship to do the right work, in the right place, at the right scale contributes to landscape scale wildlife conservation efforts and complements other efforts, including Secretarial Order 3362 aimed at improving habitat on big game winter range and migration corridors managed by the Department of Interior and Bureau of Land Management."

MIKE KUTTLE JR.

Shared Stewardship Coordinator,
Washington Department of Fish
and Wildlife



CENTRAL WASHINGTON INITIATIVE AND 10-YEAR WILDFIRE CRISIS STRATEGY



Highlighted Forest Action Plan

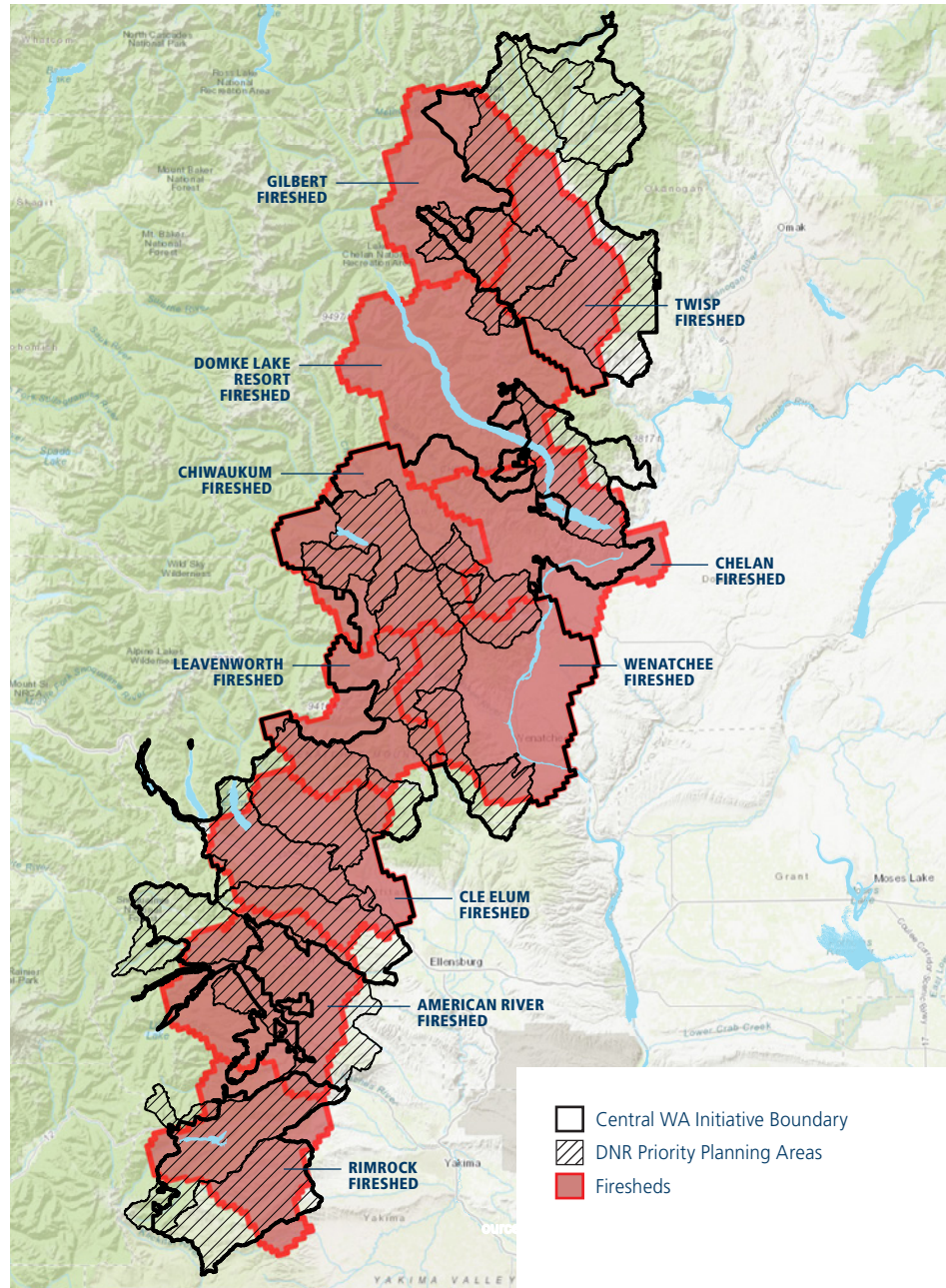
Priority Action: Prioritize forest health treatments in landscapes with the highest need and relative risk. Use risk assessment to inform mitigation and protection planning and to establish priorities.

The U.S. Forest Service released the 10-year wildfire crisis strategy, “Confronting the Wildfire Crisis: A Strategy for Protecting Communities and Improving Resilience in America’s Forests” in January 2022.

Combining years of data and analyses with a recent influx in federal funding, the strategy sets lofty targets for treatment, including up to 20 million additional acres of National Forest System lands and an additional 30 million acres of additional state, tribal, private, and other federal lands. The USFS followed that in April by announcing the 10 initial landscapes to receive investments to start implementing the strategy.

The Central Washington Initiative stretches across Okanogan, Chelan, Kittitas, and Yakima counties to encompass 2.45 million acres of tribal, federal, state, and private lands. In addition to being informed by the 10-year wildfire crisis strategy, the initiative also built upon priority landscapes and treatment needs outlined in DNR’s 20-Year Forest Health Strategic Plan: Central and Eastern Washington

In June 2022, DNR signed a Memorandum of Understanding (MOU) with the USFS, outlining a commitment to leverage resources and programs across all lands to complete forest health and fuels reduction treatments on 350,000 acres over 10 years.



CENTRAL WASHINGTON INITIATIVE: FIRESHEDS AND DNR-PLANNING AREAS

MAP UPDATED FALL 2021

FEDERAL LANDS PROGRAM SUCCESS STORY

TILLICUM HAZARDOUS FUELS REDUCTION PROJECT

Highlighted Forest Action Plan Priority

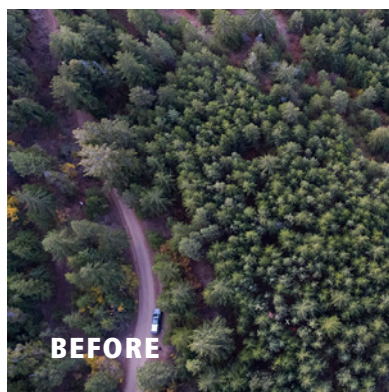
Action: Expand programs and practices to manage fuels and vegetation, and establish dedicated funding for forest health and wildfire and strengthen existing federal funding to leverage implementation.



The Federal Lands Program at DNR leads the agency's implementation of the Good Neighbor Authority agreement signed by DNR and the USFS in 2017. This gives the USFS the ability to enter into agreements with state forestry agencies, such as DNR, to implement management work to keep our national forests healthy. The two agencies collaborate to reinvest revenue from these state-led commercial projects to help meet restoration goals in those same forests. The agreement also provides states the ability to contribute toward the planning and compliance needs for restoration projects required as part of the National Environmental Planning Act, or NEPA.

The Federal Lands Program at DNR has implemented projects on all national forests in Washington under the Good Neighbor Authority agreement. The program has sold approximately 73 million board feet of timber through commercial restoration projects since 2017. The program has committed to 80 restoration projects, 30 of which are completed or in progress.

One success story from 2022 is that of the Tillicum Hazardous Fuels Reduction Project on the Okanogan-Wenatchee National Forest. DNR used the Good Neighbor Authority to help implement the 4,000-acre project in Chelan County – a project that more than tripled the total number of acres contracted for non-commercial fuels reduction via the Authority in 2019 and 2020 combined. Washington's resources complemented forest health treatments completed and planned by the USFS, while adding significant, ongoing aquatic restoration investments, to implement this landscape-scale project in a timely manner.



BEFORE



AFTER

The Tillicum Hazardous Fuels Crew, top. Aerial photos of Unit 28 of the Tillicum Hazardous Fuels Project, bottom. Photos show the unit before, and after treatment.

JOHN F. MARSHALL



LANDSCAPE RESILIENCE



Elk Forage Unit on the Snoquera Landscape with a dense plantation stand behind it.

Western WA Forest Restoration

Highlighted Forest Action Plan Priority Action: Work internally across DNR divisions, with the Forest Health Advisory Committee, the Timber, Fish, and Wildlife Policy Committee, and other partners to lay the scientific, social, cultural, and economic framework for an all-lands forest health and resilience vision and approach for western Washington forestlands, building off of existing plans and strategies.

Western Washington forests face a multitude of ongoing pressures. Between long-running threats like urban expansion and growing recreation use, and newer challenges like wildfire and seasonal flooding, restoration planning and implementation west of the Cascades requires a diverse toolbox that includes the wisdom, resources, and voices of many collaborators.

The Snoquera Priority Landscape north of Mt. Rainier National Park is located just east of the Puget Sound corridor. It experiences a high amount of human use for a wide range of recreation and cultural uses. This means the landscapes have little time to self-repair.

In addition to striving for sustainable recreation, there are outstanding challenges spanning decades that need to be addressed. Age classes and species of stands densely planted in monoculture for timber purposes, fish and wildlife habitat restoration, and sovereign nation access to important sites are all top of mind for stakeholders.

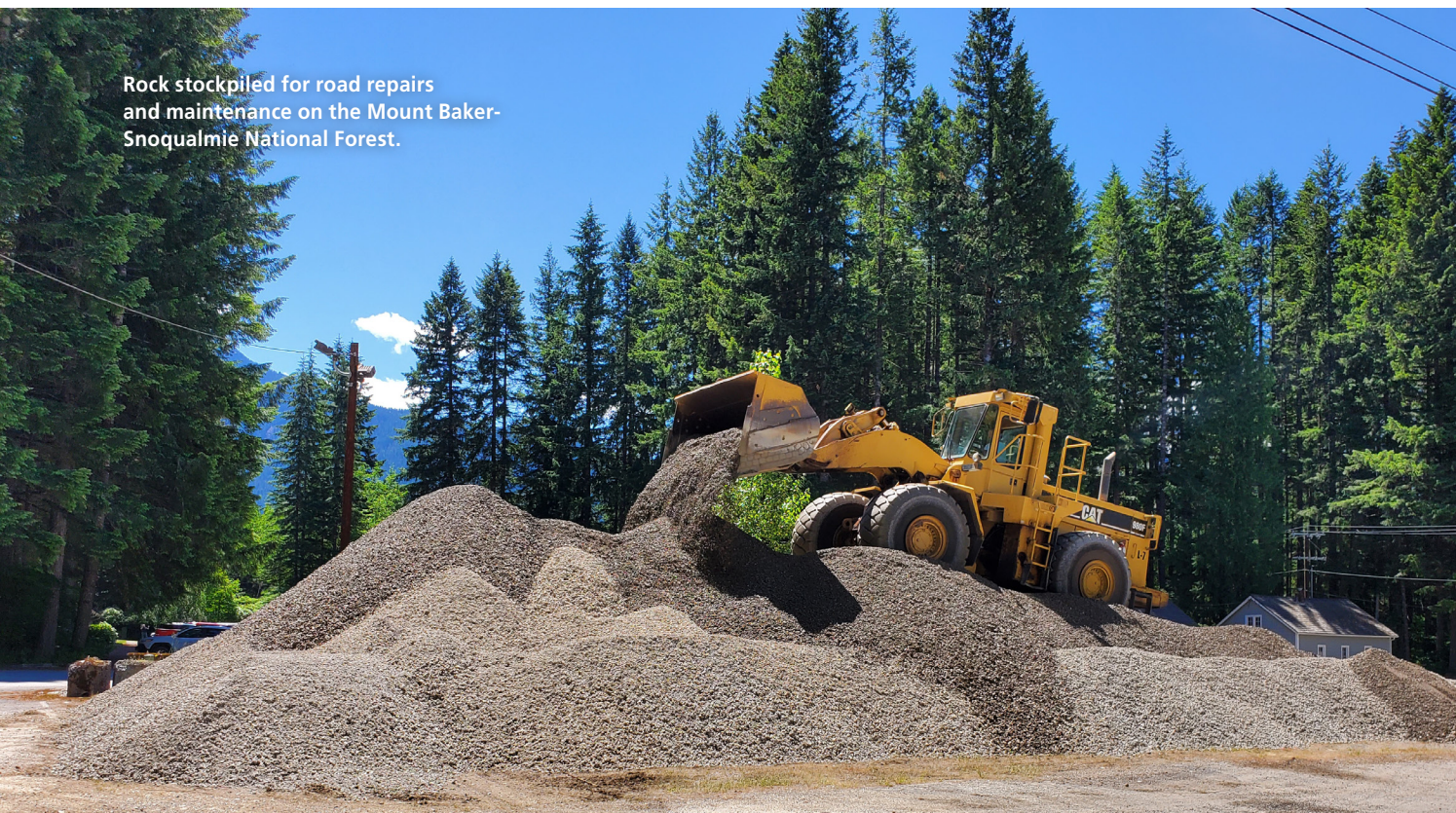
In 2019, Mount Baker-Snoqualmie National Forest staff proposed management actions on more than 15,000 acres within this landscape to balance the variety of recreational opportunities with resource protection and ecological improvements. In June 2022, stakeholders from the US Forest Service, Tulalip Tribes, Washington Department of Natural Resources, Blue Forest, Trout Unlimited and Washington Fish and Wildlife met to discuss strategies to leverage resources and ensure timely implementation of this landscape-scale project.

The threats to Western Washington forest health identified in the Forest Action Plan have proven themselves real and growing areas of concern. Winter rain events in 2021-2022 made portions of the Calawah Priority Landscape on the Olympic Peninsula inaccessible, which postponed restoration management projects by as much as a calendar year. This demonstrated the need to stay nimble, and to have additional shovel-ready projects as contingencies, especially on tight implementation and funding timelines.

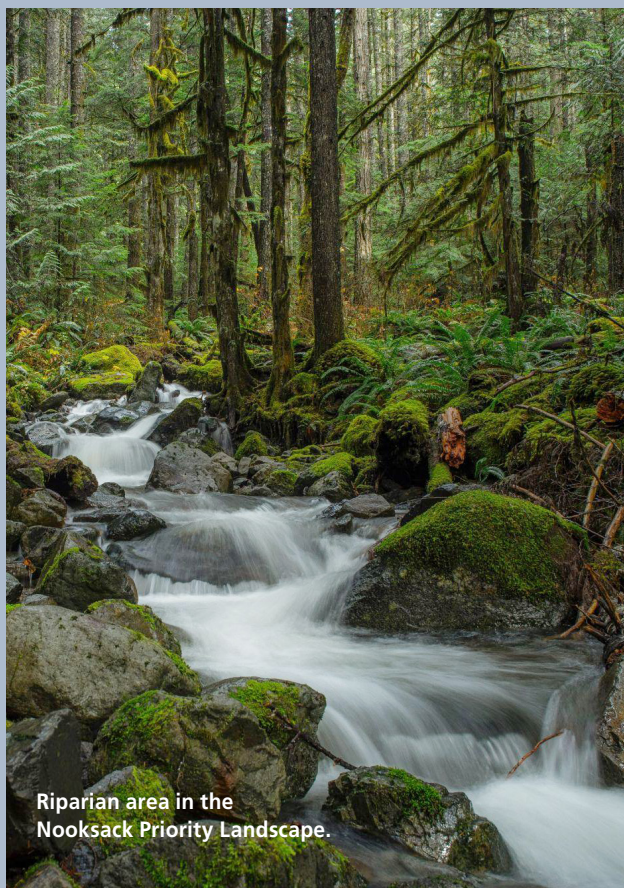
Another growing area of concern is post-fire restoration. Western Washington wildfires, while not historic in size, were notable additions to the 2022 fire season. Late-season events like the Bolt Creek Fire demonstrated the need for additional post-fire landslide hazard and erosion control planning, especially in areas where fire suppression presents extreme challenges.



Rock stockpiled for road repairs and maintenance on the Mount Baker-Snoqualmie National Forest.



TOP: CHUCK HERSEY; RIGHT: DYLAN LUDER



Riparian area in the Nooksack Priority Landscape.

THE THREATS TO WESTERN WASHINGTON FOREST HEALTH IDENTIFIED IN THE FOREST ACTION PLAN HAVE PROVEN THEMSELVES REAL AND GROWING AREAS OF CONCERN.

Forest Health Monitoring Update

Highlighted Forest Action Plan Priority Action: Increase DNR capacity to plan, implement, and monitor landscape-scale, cross-boundary management approaches through existing authorities and programs, and fully utilize Cooperative Forestry Act and Farm Bill tools, such as the Good Neighbor Authority.

During the 2019-2021 biennium, DNR staff worked with a wide range of partners to develop a [monitoring framework](#) in support of Goal 5 in the 20-Year Forest Health Strategic Plan: Central and Eastern Washington. The framework defines both specific questions to guide monitoring as well as the roles DNR staff and partners need to fulfill in order to accomplish the work at three different levels:

Regional. Defined as monitoring work that could occur in one large portion of the state, such as the Eastern Cascades. In some cases, this could include monitoring that encompasses all of Eastern Washington. At this level, tracking and detecting changes caused by treatments and disturbances may be analyzed for trends, treatment benefits, or disturbance severity, and can help inform restoration needs across the region.

Watershed/Planning Area. Monitoring at the watershed level helps identify restoration needs, prioritize treatment types and areas, and track progress made after treatments, natural disturbances, or other changes to the watershed. Focus variables include wildfire risks, departure from previous conditions in the areas, and changes in drought vulnerability.

Forest Health Treatment Unit. At the treatment level, data can help monitor and evaluate how well prescription objectives tied to forest health are being met. Much of this data needs to be collected on the ground at the actual project sites.

The framework centers on two overarching questions:

1. How are forest conditions and associated forest health indicators changing over time?

Outlining how different conditions change (as well as what drives the change, and why) is key to developing better prescriptions for treatments, better planning for forest health efforts, and better data inputs for modeling and analyses.

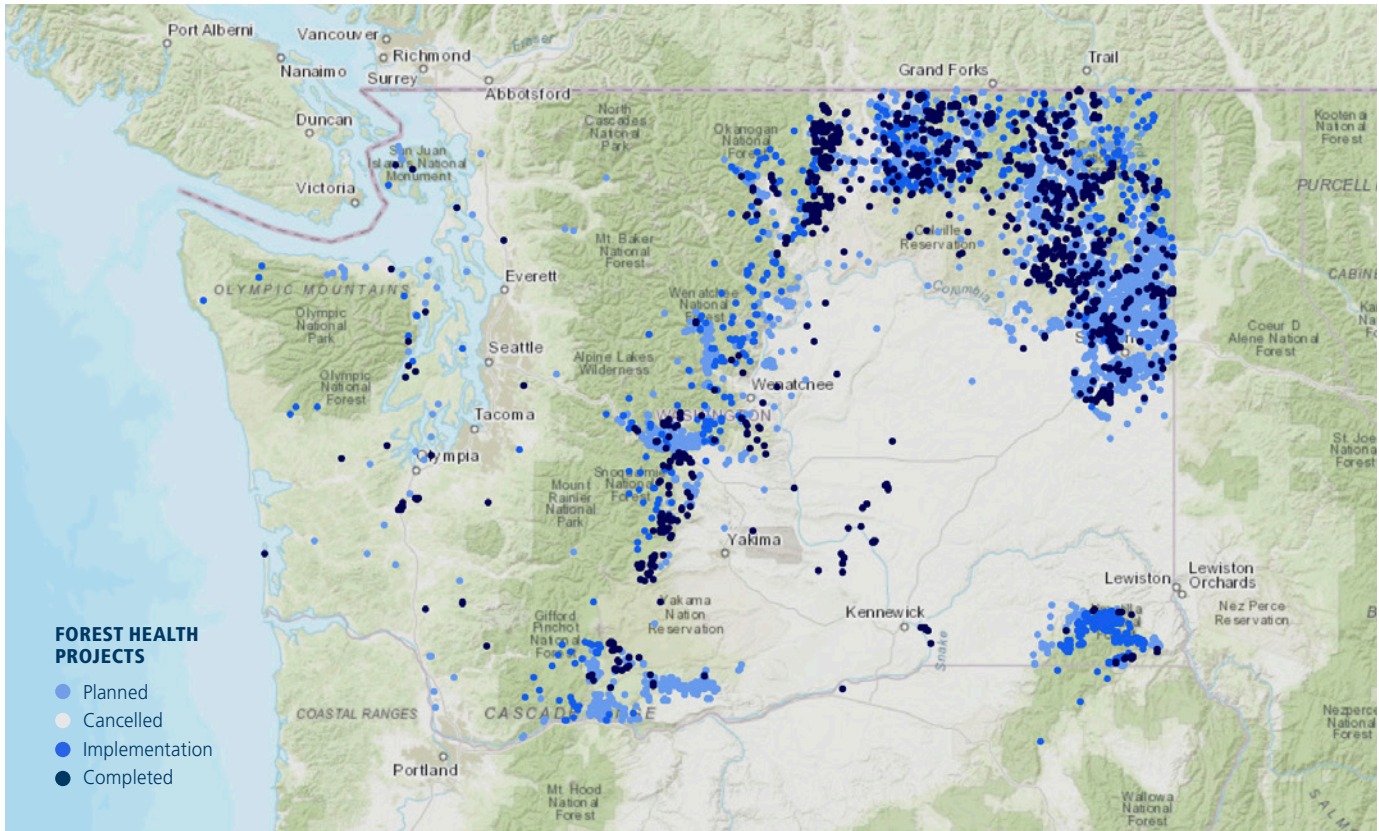
2. What are the outcomes of forest health treatments?

Outcomes can vary in both impact and length of time. Thus, repeat monitoring helps to demonstrate the weight of certain changes (such as wildfire or an insect outbreak) on a given landscape over time. This helps indicate the magnitude of these changes, as well as the intersectionality of different ecosystem components. Monitoring physical and social adaptations from forest health changes helps to determine more holistic outcomes from treatment choices and disturbances.



While monitoring continues to be a challenge in many arenas, a number of noteworthy developments have occurred during the past few years:

- The Forest Health Tracker showcases different forest health projects from a range of forest stewards, owners, and managers. This public-facing tool currently tracks more than 4,500 different projects and project components across the state. All projects include acreage, commercial/non-commercial status, location, and completion stage.
- Staff from the U.S. Forest Service, University of Washington, and DNR co-developed datasets on forest structural changes over time. Used in concert with landscape disturbance data (wildfires, treatments, and effects of insects and pathogens), changes can be quantified, and better used to determine progress toward landscape-level restoration and treatment targets.
- Starting with the 2017 fire season, a team from U.S. Forest Service Region 6 began to conduct yearly post-fire data collection. Field data on fire outcomes is cross-referenced with fuel treatments to evaluate which treatment types and return treatment intervals are most successful in slowing, managing, or stopping the spread of wildfires.
- During the 2019-2021 biennium, a team at the University of Washington investigated forest health treatment longevity. Utilizing existing datasets and literature and tying it to field data collection, the findings from the team will hopefully pave the way for determining treatment needs and treatment intervals.
- We are five years into the 20-Year Forest Health Strategic Plan: Central and Eastern Washington. To gauge plan success and progress, DNR hired a social scientist to survey a number of stakeholders and forest health partners and professionals to identify areas of success, challenges, as well as opportunities to progress work for the next 15 years.



ONLINE TOOL

FOREST HEALTH TRACKER



A wide diversity of landowners own portions of Washington forests.

This is due in part to the checkerboard of land ownership born from the heyday of the railroad industry. This diversity has only increased in recent years, making it difficult to coordinate large-scale treatments across watersheds or ecotypes.

The Forest Health Tracker is an online tool that provides a user-friendly means to track across land ownerships not only where past treatments have occurred, but when treatments occurred, what types of treatment, and how many acres were treated. As treatment implementation can sometimes be a multi-year process, the map also provides data on planned projects

not yet implemented, in order to help interested parties better align or tweak their own forest health projects to account for the plans of neighboring landowners.

The tracker additionally provides data from DNR's priority landscapes in Eastern Washington, including data on forest health projects that have occurred in each planning area.

The Forest Health Tracker also features a list of current organizations and agencies that have contributed data to the toolkit. Data continues to be added to the tracker on an ongoing basis. Knowing that all partners use a slightly different lexicon, the forest health tracker also includes a glossary of terms to define the various terms and aspects of the tracker expressed and characterized in the tool.



The Forest Health Tracker is available to the public. Keep track of projects in your area at: foresthealthtracker.dnr.wa.gov.



ERIC KIEHN

The threats to Western Washington forest health identified in the Forest Action Plan have proven themselves real and growing areas of concern.





COMMUNITY WILDFIRE PREPAREDNESS AND WILDFIRE SUPPRESSION

**2022 SEASON:
14 LARGE FIRES,
37,897 ACRES
BURNED IN
FORESTED AREAS
WHILE MORE THAN
46,414 ACRES
BURNED IN
NON-FORESTED
AREAS.**

Wildfire Seasons in Review*

Preparedness for the 2022 wildfire season included normal preparations, with the additional complexity of HB 1168 implementation. Fortunately, a delayed start to the fire season allowed extra time for hiring, training, and putting new equipment into service.

Despite starting late, the 2022 season was defined by significant fire weather events. While DNR experienced a high success rate in initial attack (93.2% of all DNR fires were held at 10 acres or less for the first three quarters of the fire year; fire year ends December 31, 2022), multiple dry lightning events and east wind periods established large fires in Washington. Extended drying facilitated large fire development in western Washington, in addition to the typical large incident load in eastern Washington. Late-season east winds pushed fire season far past the usual “end of season” fall rain onset.

The most important objective throughout 2022 has been firefighter and public safety. There were no reported civilian injuries or fatalities associated with DNR incidents. Minimizing the public health impacts of wildfire smoke remains an ongoing challenge for fire managers. The adverse effects of smoke were constantly factored into the development of incident strategies, consistent with firefighter safety. More than 60 DNR incident/injury reports resulted in just one serious firefighter injury, which was associated with a UTV rollover. There were two “hull-loss” firefighting aircraft crashes on non-DNR missions in 2022. There were no firefighter fatalities in Washington.

***Disclaimer:** Statistics presented here are the most up-to-date and accurate information provided through Sept. 30, 2022. The large fires described in this report are those fires that started on DNR protection, or are otherwise considered DNR fires. This report does not include details or statistics for other agency fires, except in those instances where DNR was directly involved in developing said information.



2022 Wildfire Season

The 2022 fire season started off in Washington with moderated conditions, due to a very wet spring statewide. This allowed for a longer onboarding period for new staff, as well as more time to implement different wildfire preparedness projects and activities. Washington's slower start to wildfire season meant we were able to support sister agencies on incidents in Southwest states and Alaska. DNR dispatched a total of 830 fire personnel, including PNW Type 1 Incident Management Team 2 to New Mexico and NW Type 2 Incident Management Teams 7, 9, 10, and one Northeast Type 3 Incident Management Team (IMT) to Alaska.

Rain during the spring season translated to an overwhelming grass fuel loading in the rangelands in Eastern Washington. As conditions turned hot and dry in July, the fine fuels eventually dried out and posed a volatile fire threat. The first large DNR Fire of the year was the Stayman Flats Fire, which started July 18, just outside of Chelan. This fire burned nearly 1,100 acres of grass, sagebrush, and some timber. Following the Stayman Flats Fire, activity ramped up throughout the state. The Vantage Highway and Cow Canyon fires occurred in the first week of August, just outside of Ellensburg, and were both managed by one Type 2 IMT. Williams Lake Fire started the same day as Cow Canyon, and grew to nearly 2,000 acres just south of Cheney. This was the first big resource commitment for Washington in 2022, which elevated the state's preparedness level to PL3 (an indicator of interagency resource commitment to ongoing fires and a trigger for additional fire management actions).

There were several thunderstorm events that passed through Washington in August. Many large fires started in both Western and Eastern Washington because of these storms, including the Goat Rocks and Boulder Mountain fires, both of which were managed by IMTs. During the second week of September, an east wind event occurred on the west side of the Cascade Range. The extremely warm and dry air fanned ongoing Cascade mountain fires and pushed a lot of smoke into the Puget Sound lowlands, ultimately deteriorating air quality into mid-October.

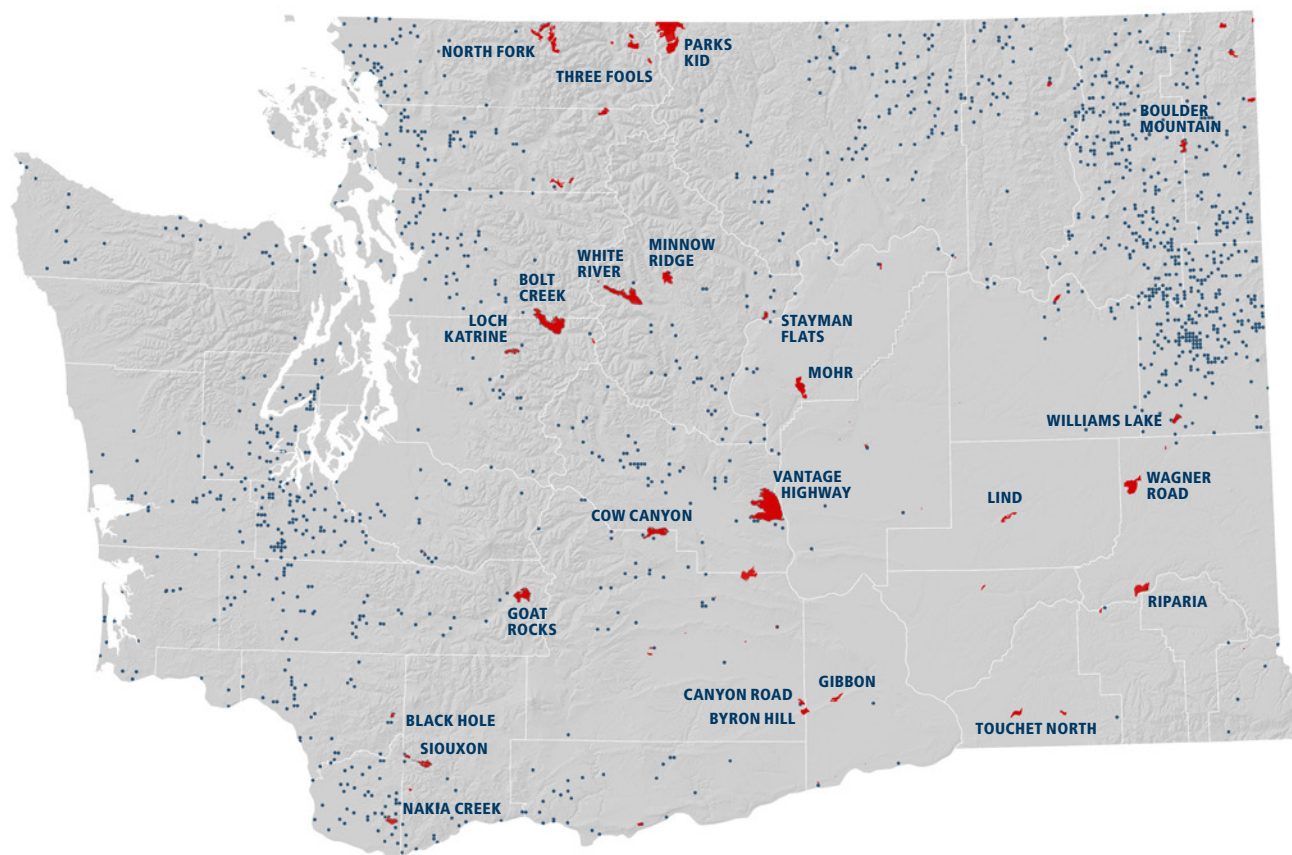
The Bolt Creek Fire occurred during this east wind event. This fire burned more than 12,000 acres of Western Washington forestland between Skykomish and Index. It forced intermittent closures of Highway 2 due to immediate fire impacts and risks to public safety. It also prompted the evacuations of more 400 homes, most of which were primary residences. A Type 2 IMT assumed command of this fire days after its start. While a 12,000-acre fire in Western Washington is not unheard of historically, it should be a reminder for the fire potential that exists in Western Washington communities, especially during periods of dry easterly winds.

The DNR Logistics section supported numerous Type 3 and 2 incidents throughout Washington with fire cache inventory and incarcerated camp crews. Specifically, these supplies, rolling stock, and crews were critical in allowing interagency incident teams to effectively support

Bolt Creek Fire
as seen from
Highway 2 near
Skykomish.

**THE BOLT CREEK
FIRE CAUSED
SIGNIFICANT
LATE-FALL SMOKE
IMPACTS
THROUGHOUT
WESTERN
WASHINGTON.**





- Large Fire Area Burned
- Other Wildfire Occurrence

30 miles

**2022 WAS THE LARGEST
FIRE YEAR IN RECENT
WESTERN WASHINGTON
HISTORY, SERVING AS A
WAKE-UP CALL TO PREPARE
FOR A TRULY LARGE FIRE
YEAR THAT WILL OCCUR
IN THE FUTURE WHEN
IGNITIONS CONVERGE WITH
DRY FUELS AND HIGH
WIND EVENTS.**

2022 WASHINGTON STATE WILDFIRES

Location of wildfires that occurred
in Washington in 2022.

DATA SOURCES: NATIONAL INCIDENT FEATURE
SERVICE 2022 (NIFC), WADNR FIRE STATISTICS 2022 (EIRS)



Cow Canyon fire in
Yakima and Kittitas
counties.



Chinook fire in
Pacific county.



and achieve their logistical objectives. Another key success achieved was the formation of the post-release incarcerated hand crew, known as Arcadia 20, and their response on numerous fires in DNR's Northeast Region.

The DNR Planning and Information Section provided ongoing incident information and predictive services support through the fire season. The DNR Meteorologist provided timely fire weather support during the entire season and the constant information flow regarding situational and fire intelligence services kept internal and external fire practitioners abreast of changing conditions. In addition, Training and Academy programs were operated using a hybrid format to address new strains of COVID that arose during the season.

The DNR Community Resilience section made great progress in implementation of its new programs, including the hiring of six new community resilience coordinators. More information on the development of this program is the most recent Forest Health Assessment and Treatment Framework report to the Legislature.

The Aviation Section was successful in supporting operations on the ground. The number of large fires across Washington caused the need to expand the air asset coverage area in order to keep response times short. DNR responded more than 250 times via aircraft support to initial attack incidents. DNR committed to heavy aircraft utilization to decrease response times, minimize exposure of firefighters to COVID-19 and reduce the risk to communities by keeping fires small. Key actions include procurement of one K-Max helicopter and three UH-60 heavy helicopters on 89-day exclusive use contracts, two CL-415 large air tanker (scoopers) on an 89-day contracts, two large air tankers, and several other type 2/3 helicopters and small fixed-wing tanker (Fireboss) aircraft.

The COVID-19 pandemic continued to disrupt staffing on fire crews and in large fire management operations, however COVID illnesses seemed to be less severe than previous strains and led to shorter durations of isolation between sickness and returning to the workforce. Many of the same mitigation protocols were put into place on IMTs to control the spread of the disease at ongoing incidents. This proved to be effective as we continued to address the disease throughout the season.

Throughout the season, safety of firefighters remained at the top of operational objectives. There were more than 60 injury/illness reports related to firefighting activities during the season within DNR, but only one significant injury related to a UTV rollover incident. Additionally, DNR management did initiate a Facilitated Learning Assessment (FLA) in result to a near-miss fire entrapment incident that occurred on the Vantage Highway Fire. This FLA is a testament of the proactive measures DNR takes to learn from actual incidents, with the goal that all firefighters can be better informed and prepared when they encounter challenging situations in the future.

As of September 30, 2022, there were 831 DNR fires, at least 82 percent of which were human-caused ignitions. One of the notable outcomes from that wildfire season was the proportion of forested versus non-forested acres burned in large fire events. Of the 14 large fires that occurred in Washington for DNR, 37,897 acres burned in forested areas while more than 46,414 acres burned in non-forested areas. DNR experienced fewer acres burned in 2022 compared to the 10-year average, and less ignitions.

DNR RESPONDED MORE THAN 250 TIMES VIA AIRCRAFT SUPPORT TO INITIAL ATTACK INCIDENTS.



For more information on wildfires, visit: dnr.wa.gov/wildfires





SUCCESS STORY

LATINO COMMUNITY FUND

Highlighted Forest Action Plan Priority Action: Fully fund and integrate the work of a coordinator position to facilitate community assistance programs, coordinate with and support partner efforts in community preparedness, and enhance engagement with limited English proficiency communities.

More than 20 percent of Washington residents speak a language other than English at home. Nearly three-quarters of those people speak Spanish. Recent estimates note that in several counties, including Adams, Yakima, Chelan, Douglas, Grant, Walla Walla, and Franklin, more than half of all households primarily speak Spanish at home.

While language can act as a communication barrier, it can also be a cultural barricade. Despite these high numbers, many educational and outreach materials, program forms, newsreels, radio and TV advertisements, and even emergency alerts in Washington are offered only in English. This makes it difficult for Spanish-speaking residents to feel welcome in spaces such as community events, regional trails, and even public institutions. Materials that are translated tend to not have additional cultural adaptations, and so often 'miss the mark' for Washington's Latine residents and neighborhoods.

Enter the Latino Community Fund (LCF) – a non-profit organization that works with Latine individuals, communities, and families to connect them to different resources, including those associated with education, health care, and community engagement.

DNR knows that its outreach and connection with Latine communities on wildfire preparedness was, at best, minimal, and in many cases, non-existent. In 2021, DNR and LCF formed a partnership, pairing LCF's expertise in meeting, understanding, and connecting with Latino communities with DNR's background in wildfire preparedness.

While LCF's partnership with DNR began in 2021, LCF's work around environmental justice, Spanish-speaking communities, and community resilience began years before. In 2019, Florida-based non-profit Sachamama brought its Climate Innovation Lab to Yakima and Chelan counties. LCF staff were part of the audience for this innovation lab, along with regional community groups like CAFE (Community for the Advancement of Family Education), and Nuestra Casa. During the innovation lab, LCF how this cohort provided a space and platform for Latino community members to be leaders in the community resiliency space.



Community listening session held by Latino Community Fund.

MANY COMMUNITY MEMBERS WERE CONCERNED ABOUT AIR QUALITY WHILE WORKING OUTSIDE DURING WILDFIRE SEASON.

Many leaders who were part of the original Climate Innovation Lab testified on behalf of House Bill 1168. Meeting with Latine community members, LCF was able to identify what was most important to each community, as well as what resources existed, what was missing, and how to fill those gaps. Lilliane Ballesteros, the Executive Director of the LCF, noted that it was key to understand what was important to the community as a whole – not just what was important in relation to community wildfire preparedness. By understanding what drove each community, LCF was able to connect them with resources that met their unique community resilience needs.

One large concern for many communities was air quality and health – many community members were concerned about air quality while working outside during wildfire season, as well as how the smoke affected the air their children were breathing. LCF realized that community resilience in these communities needed to come from a workplace safety, L&I-type lens. In other listening sessions, community members noted that political influence, educational opportunities for youth, housing challenges, and economic opportunities were all large concerns.



LILLIANE BALLESTEROS

LCF also realized that, for communities to want to invest in taking action over the long term, residents had to see themselves as key parts of their community. Language barriers, lack of cultural understanding, and regional events not scheduled at convenient locations or times for Latine families leads to them feeling less seen in their home cities and counties.

Ballesteros noted that this lack of place-based connection drives things such as low voter turnout, as well as Latine youth moving away from central and eastern Washington hometowns. Collaborating with organizations like Latinos Outdoors, which leads overnight camping trips for Spanish-speaking persons and helps Latine communities to reclaim their place in their communities.

In addition to hosting several community meetings, LCF and partners were able to develop a number of resources for Spanish-speaking communities, including a post-fire recovery guide. They held follow-up meetings with community leaders to identify needs, gaps, and challenges with current program offerings.

With the partnership now in its second year, LCF and DNR also have a better understanding of each other. It took several months for both parties to understand the other's frame of reference and that, more often than not, they were looking at the same thing through two different lenses

Impact of Smoke on Human Health

Fires and smoke impacted communities throughout the 2022 fire season. According to a post on the Washington Smoke Blog, "the number of people exposed to unhealthy or worse air quality (daily PM2.5 average of > 55 micrograms per cubic meter) in 2022 is comparable to the smoke-filled days of 2017, 2018, and 2020."

One difference between 2022 and previous years was the duration of smoke events. While the smoke lingered for much longer than hoped, the majority of Washingtonians were exposed to unhealthy air for fewer than five days. A smaller fraction of the state (those located closest to active fires, including the areas of Darrington, Leavenworth, and Wenatchee) were exposed to unhealthy air for 10-14 days.

State, tribal, and federal partners teamed up to provide informational calls, social media posts, blog posts, and to answer questions on the blog, all to provide the public the most current information on wildfire and smoke conditions. During the 2022 fire season, Washington hosted four air resource advisors, including one trainee who covered 23 days for the Chilliwack Complex and the White River Fire. Technical specialists dispatched to incidents to assist with understanding and predicting smoke impacts on the public and fire personnel, air resource advisors analyze, summarize, and communicate those impacts to incident teams, air quality regulators, and the public.



For more information, visit
the Washington Smoke Blog at
wasmoke.blogspot.com.



Wildfire Ready Neighbors Continues

WILDFIRE GOAL 2

Communities are prepared and adapted for wildfire.



In 2022, DNR continued the Wildfire Ready Neighbors program, expanding to six targeted counties in Eastern Washington. The program includes marketing campaigns with the goal to increase landowners, homeowners and community engagement in targeted communities. Three counties – Spokane, Okanogan and Chelan – participated in the marketing campaigns in 2021 and continued with marketing campaigns in 2022. Three new counties had marketing campaigns in 2022: Kittitas, Yakima, and Klickitat. Marketing campaigns ran for four to six weeks. More than 1,915 landowners and homeowners received a Wildfire Ready Risk Assessment.

Wildfire Ready Neighbors Project Goals

- Motivate people in high-risk areas to take action and become wildfire-ready.
- Raise awareness and provide preparedness plans residents can follow to build wildfire resiliency for both the short and long-term.
- Build a simple and replicable program framework and brand that can be easily adopted in communities across Washington.
- Continue to grow and deepen community relationships around issues of wildfire and resiliency

WILDFIRE RISK PROPERTY ASSESSMENT SIGN-UPS BY COUNTY THROUGH WILDFIRE READY NEIGHBORS PROGRAM

COUNTY	SIGN-UPS
Chelan Wildfire Ready Plans	326
Okanogan Wildfire Ready Plans	337
Spokane Wildfire Ready Plans	588
Stevens Wildfire Ready Plans	75
Yakima Wildfire Ready Plans	247
Kittitas Wildfire Ready Plans	91
Klickitat Wildfire Ready Plans	118
Other Counties	133
Total Sign-Ups Overall	1,915

WILL KNOWLTON



Wildfire Ready Neighbors
Fall Surge event in Okanogan.

I would like to see Wildfire Ready Neighbors expanded to the rest of the Colville reservation and CCT communities in Ferry County.”

IKE CAWSTON JR.
Mt.Tolman Fire



SUCCESS STORY

WHATCOM COUNTY FIRE DISTRICT 14



Highlighted Forest Action Plan

Priority Action: Fully fund and integrate the work of a coordinator position to facilitate community assistance programs, coordinate with and support partner efforts in community preparedness, and enhance engagement with limited English proficiency communities.



Whatcom County Fire District 14, which services the Sumas, Kendall, Welcome, and Maple Falls

communities, was awarded an M1083 (LMTV-Light Military Tactical Vehicle) Stewart and Stevens 6x6 cargo truck via the Fire Fighter Property (FFP) Program. The fire district took possession of this five-ton military vehicle on February 16, 2022. With funding from the DNR through both the Volunteer Fire Assistance (VFA) grant and HB1168, the fire district was able to complete the project on September 13, 2022.

The Volunteer Fire Assistance (VFA) Program is a cooperative forestry program funded in partnership with USFS. In 2022, \$589,717 was awarded to support 186 rural fire districts. The objective of the VFA program is to improve the capacity and capability of rural and volunteer fire districts.

The finished project took the fire district nearly seven months to complete, at a total cost of nearly \$69,000. More than 50% of the cost was funded by VFA and HB 1168. The truck is outfitted with a 600-gallon water tank and 30-gallon foam tank. In addition to using this truck as a tactical brush truck, it can be used during high-water emergencies. This wildland brush truck responded to its first brush fire only a couple weeks after being placed into service.

U.S. DEPARTMENT OF DEFENSE



BEFORE

DAVIS MOE, WHATCOM FD 14



AFTER

**IN 2022, \$589,717
WAS AWARDED TO
SUPPORT 186 RURAL
FIRE DISTRICTS.**



COMMUNITY WILDFIRE PREPAREDNESS
AND WILDFIRE SUPPRESSION

JOHN F. MARSHALL





**THE USDA
FOREST SERVICE'S
FOREST LEGACY
PROGRAM HELPS
TO ENSURE
FORESTS THAT
ARE THREATENED
BY POTENTIAL
DEVELOPMENT
OR CONVERSION
PRESSURES STAY
AS FORESTS
FOR FUTURE
GENERATIONS.**

KEEPING FORESTS AS FORESTS

Washington is home to more than 22 million acres of public, private, and tribally-owned forestland. However, the total amount of forested land in Washington is declining. Washington has lost more than 1.5 million acres of forest since 1978 to private development (Bradley et al. 2007). The loss of forests puts ecological, socio-cultural, and economic values at risk:

- **Washington is the second-largest producer of lumber in the country**, supporting 42,000 workers and more than 1,700 forest products businesses that generate more than \$28 billion in gross business income annually (Washington State Department of Commerce).
- **Forests in Washington state sequester an estimated 13.7 million metric tons of carbon dioxide each year**, the annual equivalent of the energy used by 1.6 million homes (DNR 2020, EPA Greenhouse Gas Equivalencies Calculator 2021).

The Forest Action Plan committed to:

- **Expand efforts to ensure sustainable food and timber production** by conserving working farms and forests, securing water resources, and protecting high-productivity soils in the face of population growth.
- **Enhance retention of working forestland held by small forest landowners.**
- **Enhance and develop incentives, ensure effective administration of regulations**, and foster sharing of information among relevant agencies and partners protecting and restoring ecologically important forestlands.
- **Explore innovative approaches** to conservation finance tools to address forest loss, such as expansion of federal programs to conserve forests, in the 2023 Farm Bill.

As with many aspects of forest health, keeping our state's forests intact is a task that requires many programs and partners.

Nonprofits like The Nature Conservancy, Trout Unlimited, Sustainable Northwest, and Conservation Northwest, to name just a few, work to steward and protect important forests, while also restoring forested areas to provide habitat, recreation spaces, as well as conserve important cultural and spiritual spaces for generations to come.

The USDA Forest Service's Forest Legacy Program helps to ensure forests that are threatened by potential development or conversion pressures stay as forests for future generations.

DNR programs like the Natural Heritage Program help us to conserve, steward, and preserve special, rare, and important ecosystems from development, while Forest Practices Habitat Conservation Plans help DNR staff in to plan for long-term, sustainable stewardship of important habitat on state trust lands.



Webster Nursery. Many of the facilities were built in the 1960s, and are in need of renovations and/or retrofits.

Keep Washington Evergreen

Highlighted Forest Action Plan Priority Action: Develop climate-resilient seed management and reforestation approaches. Ensure ongoing diversity of seeds and species collected, stored, and managed by DNR.

Years of overstocked, wildfire-suppressed forests have shown us the true meaning of “too much of a good thing.” Many forests are denser and less healthy than they have ever been. However, while some of Washington’s forests are in desperate need of thinning, there are many areas where trees could use a boost. Hills blackened by severe wildfires need trees to help reduce erosion and landslide risks. Many urban communities, especially those with higher populations of people of color, have much lower tree canopy cover than communities with largely white populations. Insect infestations and forest pathogens can wipe out tree species in a community, while climate change can drive certain trees to be better suited at different latitudes or elevations.

With these factors in mind, DNR proposed legislative actions in two key areas for the 2023 legislative session: reforestation and urban forestry.

Reforestation requests stem from years-long issues of space and capacity at Webster Nursery, the DNR’s longtime tree nursery. Built in 1965, Webster Nursery is in need several renovations. Proposed retrofits would include a new main facility, new greenhouses and grow pads, as well as additional capacity to increase seedling growing capacity (as well as seed collection capacity) by 50 percent.

Genetic variability among species has shown its importance in fighting off pests in recent decades, helping to create forests that are more resilient for our future. While the USFS has 25

seed sites to help combat forces of pathogens and changing conditions, these orchards, due to many years of low funding, are themselves at risk to things like wildfires, and require forest health and restoration funding in order to support seed diversity in our region. DNR has also sought funding to develop a comprehensive strategy that will identify where and how to reforest, or afforest, priority landscapes where it makes the most ecological, social, and financial sense.

In addition to planting the right trees for our future, Washington needs trees in the right places. DNR is requesting a number of resources to help our state steward and create more urban green spaces in an equitable way. This request outlines a number of different spending areas, including a statewide tree equity map that will outline where health, economic, and climate benefits from trees are currently lacking in Washington. The data will be used to guide tree planting investments in urban areas and communities statewide.

In line with this – the request asks for additional funding for the community forestry assistance. While government officials can glean details on community needs through meetings, conversations, surveys, and other tools, these things only offer a limited view into what a community will actually need – the community itself, as one would expect, is always going to be the ultimate expert. Thus far, the Urban and Community Forestry Program has given approximately 50 percent of its past community forestry assistance dollars to communities that have inequitable tree cover and green spaces. These additional funds would help to empower communities to fund this work for several additional years, for projects such as planting additional trees, creating accessible green spaces, restoring and cleaning up current parks and greenways, and combating forces such as canopy loss due to development or pathogens.

Forest Legacy Program Highlights

Highlighted Forest Action Plan Priority Action:
Support a collaborative process to prioritize geographic locations to restore or protect ecologically important areas. Support acquisition of unique and important habitats in partnership with other entities including WDFW, State Parks, and others in line with the relevant authorities and processes, such as those described in WDFW's Lands 20/20 report.

Since 1990, the Forest Legacy Program (FLP) has helped protect forests at risk of being permanently converted to non-forest uses. In Washington, where our wildland-urban interface continues to be one of the fastest-growing land types, maintaining forestlands is key to helping the Evergreen State retain its hue. As one of the original five states to be part of the Forest Legacy Program, Washington has a long history of protected lands to boast about, with more than 85 tracts as of September 2021. Below, we highlight a few recent additions:

Dewatto Headwaters Forest



Located in Mason and Kitsap counties, this project is the final phase of a three-part easement built over several years. Starting with the Tahuya FLP Forest (funded in 2007, completed in 2021) and the proposed Phase 2 project (funded in 2020), the Dewatto Headwaters Forest adds an additional 4,304 acres to this landscape, which now totals 11,460 conserved acres. As part of Pope Resources' Hood Canal Tree Farm, the conserved forestland supports 41 direct positions, and 43 jobs indirectly. The diverse site includes 23 acres of few-flowered sedge, an imperiled ecosystem in our state, as well as 380 acres of wetlands, 15 miles of streams, and 106 acres of lakes. Due to its position near the Kitsap Naval Base, the US Department of Defense also provided funding for this project; the Dewatto Headwaters Forest also provides a buffer for the sometimes noisy submarine testing.

Kittitas Working Forest.

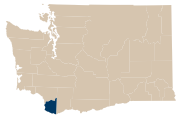


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KEEPING FORESTS AS FORESTS

Yacolt Forest



Another final piece of a three-phase project, the Yacolt Forest (funded in 2020, 2021, and proposed for 2022), is the largest section of private timberlands in Clark County. Nestled next to the Gifford Pinchot National Forest, the Yacolt helps maintain forestland connectivity near the Vancouver/Portland metropolitan area, where development pressures remain high. The Yacolt Forest includes the Cedar Creek headwaters, which remains one of two undammed tributaries in the region. Topping in at more than 21,800 acres, the Yacolt Forest also helps support Clark County's forestry workforce of 2,300 positions across the county.

Kittitas Working Forest



Seattle-area residents continue to spill eastward into neighboring Kittitas County, where development has boomed in recent decades. It sits in the eastern Cascades, a key area for habitat, species, and climate conversion zones. Past development in the area has fragmented important habitat for a variety of wildlife, including elk, wolverine, gray wolves and northern spotted owls, making it more difficult for these key species to adapt to climate change induced conditions.

The Kittitas Working Forest was identified by the Washington Wildlife Habitat Connectivity Working Group to be a key landscape for wildlife's abilities to adapt to climate change. With the landscape moving through different elevations, temperatures, and types of vegetation and weather, the landscape provides the flexibility for many species to adapt to changing conditions. Additionally, Kittitas Working Forest neighbors 3,000 acres of community forest and state trust lands. Made up of 5,870 acres within the Cabin Creek Watershed, the Kittitas Working Forest also provides important protection for the Yakima River headwaters, which support irrigation for Yakima Valley's important apple and cherry crops, as well as 75% of the US's hops supply.

TOPPING IN AT MORE THAN 21,800 ACRES, THE YACOLT FOREST ALSO HELPS SUPPORT CLARK COUNTY'S FORESTRY WORKFORCE OF 2,300 POSITIONS ACROSS THE COUNTY.

JOHN F. MARSHALL



View of Kittitas Working Forest.



MADISON NICKEL





HOUSE BILL 1216 ALSO GAVE UCF THE CAPACITY TO QUINTUPLE ITS PASS-THROUGH GRANT DOLLARS TO COMMUNITIES THROUGHOUT THE STATE. THE GROWTH ALSO PROMPTED THE UCF PROGRAM TO INCREASE ITS PER-GRANT MAXIMUM TO \$40,000 PER PROJECT.

URBAN AND COMMUNITY FOREST RESILIENCE

Urban trees and forests often face more stressors than their non-urban counterparts. Heat from roads, buildings, and structures can dry out trees much more quickly, while pollution from cars, factories, and other urban sources can cause tree's carbon-capturing abilities to work overtime.

The Urban and Community Forestry (UCF) Program at DNR supports planning, planting, and maintenance of trees in Washington communities. Tree cover enhances quality of life and promotes cleaner air for concentrated populations, provides much-needed shade and relief from heat islands created in urban environments, and habitat for metropolitan wildlife.

The UCF program has awarded \$2,487,000 in grant funding since 2008 to community partners. See this map to learn more about project locations and specifics. House Bill 1216, which passed in 2021, requires at least 50% of all resources support those communities most environmentally vulnerable and with high-impact environmental inequities.



Urban and Community Forestry Program Gets Much-Needed Support and Growth through State Funds

Highlighted Forest Action Plan Priority Action: Foster new funding opportunities to support the use of urban forestry and green infrastructure as a workforce development and job creation strategy as well as a critical therapeutic tool for reducing inequity and improving community health and quality of life.

Studies have shown the importance of trees and green space in our urban areas (Wolf, et al). From physical benefits – urban trees help with storm water retention, provide localized temperature control, reduce airborne pollutants, and create and secure wildlife habitat – to the social – higher tree canopy cover is associated with a decrease in crime and shorter hospital stays – trees in our cities are a needed resource that we must sustainably manage and steward.

The need for urban and community forest experts in Washington continues to grow. The U.S. Census Bureau listed Spokane County as one of the fastest growing counties. Seattle's population grew by more than 20,000 people as of April 2022, accounting for more than two-thirds of the growth in all of King County. Growing development pressures will continue to challenge urban tree cover, making resilient management a huge need, both now and into the future.

Fortunately, the DNR UCF program is starting to get some much-needed press and support. The Legislature passed HB 1216 in 2021, which helped to resurrect the Evergreen Communities Act.

Appropriations from this legislation directly support six UCF-specific positions, and two supporting staff roles (one position to support GIS, and the other in a contract support role), more than doubling the prior staff of three. These new positions help increase capacity for many urban forestry endeavors, and help to launch and implement new programs and avenues. The Urban Forest Inventory Specialist, for example, spearheads the new Urban Forest Inventory and Analysis Program. The Evergreen Communities Coordinator will design and develop a new recognition and incentives program for jurisdictions taking steps to add greenery to their communities. The latter position will manage applications for the Tree City USA program, the Evergreen Communities program, and other related programs. Three additional technical positions help gather inventory data, provide the necessary urban forestry, on-the-ground knowledge, and expertise to share best practices on tree and site selection, tree identification, and maintenance and planning advice to a variety of metropolitan areas throughout the state.

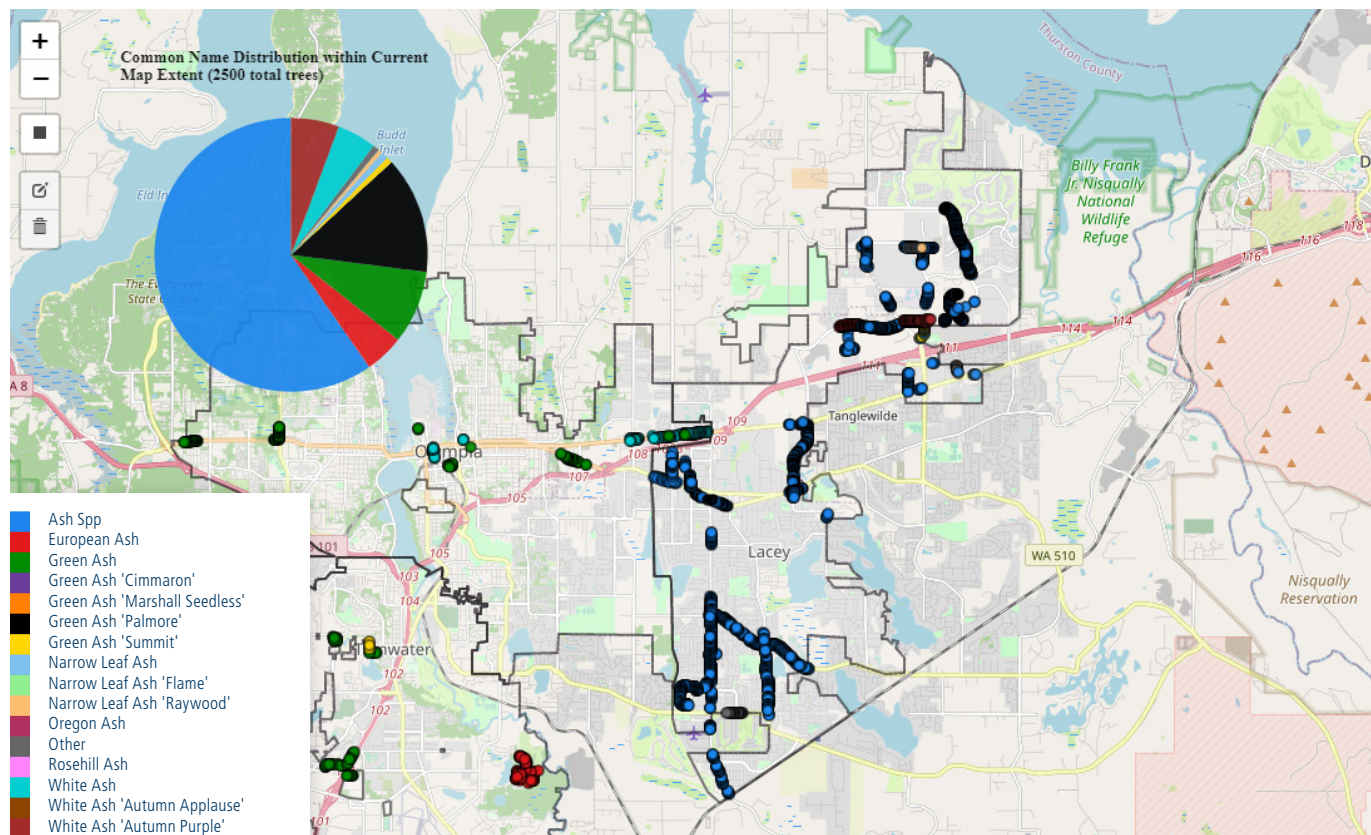
LUIS PRADO



House Bill 1216 also gave UCF the capacity to quintuple its pass-through grant dollars to communities throughout the state. The growth also prompted the UCF program to increase its per-grant maximum to \$40,000 per project.

In-line with other recent legislations aimed at reducing inequities in our communities (such as SB 5141 and SB 5793), HB 1216 requires the program to use 50% of all funds to support work in highly impacted communities – communities currently facing some of the highest environmental pollutants, socioeconomic pressures, and health effects in the state.

The UCF program does not plan to slow down anytime soon. With needs only expected to grow over future decades, DNR is also working on amended Keep Washington Evergreen priorities for the 2023 legislative session. Proposals build upon current equity measures introduced in HB 1216, and include funding for a youth conservation corps focused on urban forestry, expanding a tree equity map to better prioritize and guide urban forestry investment, as well as additional funding for community forestry assistance. For more information, see the Keeping Forests as Forests Section of this report.



Resources at the Ready: How the Pest Readiness Playbook Helps with the Recent Emerald Ash Borer (EAB) Detection

Highlighted Forest Action Plan Priority Action: Increase municipal forest pest readiness through municipal training for pest detection, community preparedness assessments, and development of pest readiness response plans in partnership with the Washington Invasive Species Council (WISC).

Although we are residents of the Evergreen State, we aren't always fond of all things green – or in this case, emerald.

On June 30, 2022, scientists confirmed the first report of Emerald Ash Borer (EAB, *Agrilus planipennis*) in the Pacific Northwest. Found infecting ash trees in Forest Grove, Oregon, EAB is not yet known to be in Washington, but it could be coming soon. Neighboring Washington counties like Clark and Cowlitz are within 30 miles of the known infestation.

First discovered in Michigan 20 years ago, EAB is a tiny insect (half an inch from tip to tip) that's had a big impact – it has spread to 35 states thus far, with true ash trees (genus *Fraxinus*) seeing upwards of 99 percent mortality in this tiny insect's wake.

Above: Through an internal DNR geospatial tool, UCF staff can determine what percentage of a metro area's urban tree inventory may be susceptible to EAB. The application screenshot above showcases the locations of such trees in Lacey, WA, of which 20.35% of the inventoried trees would be susceptible. Tool and visual developed by Drew Lyons.

Oregon ash (*Fraxinus latifolia*), our region's only native ash species, is one of the only species that can grow in lowland riparian and wetland environments. It provides much-needed shade, bank stabilization and habitat cover for several aquatic and bird species in the Pacific Northwest.

If Oregon ash is lost, it could lead to miles of streambank degradation, loss of much-needed habitat, and a reduction in water-bank channelization complexity. Openings left in the wake of ash mortality could also spawn a number of invasive plant infestations, further reducing important botanic diversity in our region's riparian and wetland environments.

Fortunately, DNR's Urban and Community Forestry Program, with the help of partners like the Washington Invasive Species Council, is prepared to help communities prepare for EAB. We have resources at the ready – namely, the Urban Forest Pest Readiness Playbook.


**Adult Emerald
Ash Borer.**

Urban Forest Pest Ready Assessment
Pest Pathways

QUESTION	YES	POINTS	NO/NOT SURE?
Do you have an understanding of local hot spots for pest introduction to your community including (check yes if no hot spots exist):			
4a. Locations where there is an influx of new residents or popular destinations for out-of-state visitors	<input checked="" type="checkbox"/>	+1	See Action 4
Transportation corridors and storage facilities for commercial movement of forest and agriculture products	<input checked="" type="checkbox"/>	+1	
Commercial ports (check yes if there are no commercial ports)	<input checked="" type="checkbox"/>	+1	
4b. Have you documented the locations and supplementary information about size of these pest introduction hot spots?	<input checked="" type="checkbox"/>	+1	
4c. Has your community identified trees or locations that are particularly pest vulnerable?	<input checked="" type="checkbox"/>	+1	

Pest Prevention

5a. Does your city staff use Best Management Practices to prevent the spread and introduction of pests?	<input checked="" type="checkbox"/>	+1	See Action 13
5b. Do you or partners provide training for local contractors on tree care or Best Management Practices to prevent the spread and introductions of pests?	<input checked="" type="checkbox"/>	+1	

 Actions 3, 4, 6, 7, 13
 Understanding risk subtotal

of 21

Continue to the next section to calculate your "Capacity to Support a Response"

A MUNICIPALITY MAY SAVE THOUSANDS, IF NOT MILLIONS, OF DOLLARS IN LONG-TERM TREE CARE AND MANAGEMENT COSTS BY HAVING A PLAN IN PLACE WHEN AN INVASIVE PEST OUTBREAK OCCURS.

Left: A page from the Urban Forest Pest Readiness Playbook's readiness assessment.

Launched in 2019, the playbook is a toolkit to help cities, counties, towns, tribes, and other urban forestry programs better prepare for potential invasive pest outbreaks. The playbook is a self-assessment across four domains of readiness that local jurisdictions can use to gauge their preparedness, identify existing resources, determine their pest priorities, set goals, and outline their next steps and actions to improve readiness.

Jurisdictions that use the playbook sometimes discover they have areas where their preparedness efforts fall a bit short. They can follow prompts and suggestions within the playbook for a number of actions that can help them improve those areas. For example, the playbook includes links to several additional online resources, such as planning templates, as well as contact lists for state and federal invasive pest response agencies.

With more than 80 pages of rich content, the playbook outlines 20 key actions that each municipality, community, or program should take – and even tells users which actions they need to complete in order to be best prepared. All actions help to improve a community's ability to rapidly respond to an infestation when a presence is detected.

Our forest health team knows that a single detection can often mean a much larger infestation of an invasive pest, thus warranting rapid action. Communities that fail to prepare or that must develop a plan after an infestation has occurred often accrue huge costs as they implement quarantines, long-term management and removal programs for trees and other vegetation. Such programs cost billions of dollars annually in the United States alone.

A municipality may save thousands, if not millions, of dollars in long-term tree care and management costs by having a plan in place when an invasive pest outbreak occurs. The DNR UCF Program is also ready to assist: communities that find they are ill prepared to address invasive pests can apply for grants to close gaps and bolster pest readiness.

As for EAB – our region has the benefit of 20 years of data and management advice from other states and provinces to hit the ground running with this recent detection. Learning from past EAB challenges and successes, we have a great roadmap for how to navigate – and hopefully save – this important, native tree species in the Pacific Northwest.

For example, the Oregon Department of Forestry has staff dedicated to collecting Oregon Ash seeds from its native communities to help preserve genetic diversity in the species' gene pool and to test trees for EAB resistance. A larger effort is also underway through the USDA Forest Service's Woody Collections Program, which has collected seeds in California, Oregon, and Washington. Currently held in long-term storage, these seeds may help re-invigorate any ash populations

MICHAEL HUNTER



A large dying white ash tree infected with the Emerald Ash Borer.

affected by EAB outbreaks. Individuals with ash trees in their community or work environment can start to keep an eye out for telltale signs of infestation; ash trees with thinning crowns are often the first sign to spot from afar.

EAB leaves one-eighth inch, capital D-shaped holes in ash bark. Bark split or cracked vertically can also be a sign that merits further investigation of a potential EAB infestation. Finally, keep an eye out for the small, metallic green beetles. Due to their small size, they can be hard to spot, and look similar to a lot of other insects that have no impact on ash trees. The Oregon Department of Agriculture's EAB ID guide can be a great tool for those interested in learning to identify EAB.



Report suspected insect sightings using the Washington Invasive Species Council's "Report a Sighting" website:
invasivespecies.wa.gov/report-a-sighting.





PHOTO BY KEN BEVIS / DNR



Thinning work in progress
at Roslyn's Community Forest.



THINGS LIKE INDUSTRIAL FIRE PRECAUTION LEVELS (IFPL) RESTRICTIONS CAN BRING PROJECTS TO A GRINDING HALT IN THE MIDDLE OF THE FIELD SEASON, CAUSING STAFF TO RE-WORK THEIR SCHEDULES TO ACCOMMODATE.

RURAL ECONOMIC DEVELOPMENT

Forest and community resilience go hand-in-hand with rural economic development in Washington. While the number of people in a metro area can often drive focus to Washington's larger cities, rural areas are often on the front lines of our forest health and wildfire crisis. A whopping 97 percent of the United States' land mass is considered rural. Those lands support the health of our water supplies, and a vast majority of our state's energy sources.

Washington's rural spaces are also some of our largest recreation spaces, with holistic management being a huge need for any sustainable, long-term plan. With Washington's population continuing to grow and diversify, economic and social needs for our rural communities will be similarly require support for expansions and evolutions to meet their variety of needs.

ASHLEY BLAZINA-COOPER



MARS Staff lead DNR Forest Resilience Division team members on a tour of the Spring 2022 burn area in the Mount Adams Community Forest.

Mount Adams Resource Stewards: Raising the Voices of Rural Communities, Local Ecological Knowledge, and Stewardship

Highlighted Forest Action Plan Priority Action: Enhance economic development through implementation of forest restoration and management strategies that maintain and attract private sector investments and employment in rural communities.



Rural communities in the Pacific Northwest have faced economic challenges during the past few decades. However, as one community-based stewardship organization

has found, there are opportunities – it just takes staff and partners who have the drive, passion, creativity, and attitude that the work will be finished. The people who can look past the reasons to say no, and figure out a way to make a project happen, find success.

Founded in 2004, Mount Adams Resource Stewards (MARS) is a non-profit organization built out of western Klickitat County concerns about future economic opportunities in that region, as well as the need for stewardship and management of the surrounding forests. For decades, residents had (and have) seen natural resource contracts and jobs go to companies as far away as Idaho and Montana.

With nearly two decades under its belt, MARS has shown itself to be a leader and success story in the community-based, non-profit realm, as well as natural resource stewardship. Based around three pillars – land stewardship, local economic opportunities, and thriving communities – MARS has developed a variety of projects and programs to meet the unique and specific needs of the communities in and around Mt. Adams.

As members of the local community, MARS staff have a high level of passion and ownership of the stewardship work that they do simply by being members of the community, yet also have a lot more localized knowledge of past projects' successes and failures, the history of different plots of land, as well as the effects these projects had on local towns and communities. As any good natural resource professional will tell you, there is no one-size-fits-all model when implementing stewardship plans – adaptive practices are a must. With the localized knowledge that MARS and other community-based organizations have, this trial-and-error period in the field can be dramatically decreased, leading to more sustainable project development and implementation.

MARS attributes its own nimbleness and adaptability as a reason for its success. Things like Industrial Fire Precaution Levels (IFPL) restrictions can bring projects to a grinding halt in the middle of the field season, causing staff to re-work their schedules to accommodate. Burn bans, timing restrictions and weather windows make lining up projects a challenge. MARS staff need to spend a good amount of time puzzling together a variety of projects to keep their local workforce employed.



Partners – both big and small – are a key to the work MARS does. MARS has witnessed many perceived project barriers dissolve when partners are willing to talk and do a little creative thinking. Having multiple successes through a partnership over time can lead to deeper trust, which help MARS and partners define their most effective roles to best utilize skillsets and capacity. All of these components lead to better project outcomes.

Commitment to getting the project done from all parties is also key. Looking forward, MARS believes that, to continue to do this type of work, or to see an expansion of community-based organizations like MARS, funding, policies, and collaborative decisions all need to be a bit more thoughtful and holistic, especially to create projects that are sustainable both in terms of forest and community resilience.

Regional Community Resiliency a Focus for Peshastin-Based Company

 **Rural Economic Development Goal 1:** Strengthen and build partnerships with federal, state, and local stakeholders and tribes in order to help address community economic development issues.

Many thinning projects associated with improving forest health conditions and fire resiliency for a stand are deemed non-commercial or non-lucrative – without a large commercial harvest associated with these treatments, it is difficult to find a way to make them viable.

Despite the economic difficulty of these projects, a large need for these types of forest health treatment exists. Connor Craig, owner of the Peshastin-based company, Wildfire Home Protection, has found a distinct niche as a small private business owner in tackling this forest resilience challenge.

Craig has first-hand experience with fuel reduction needs: he spent six years as a member of a hotshot crew based out of the Entiat Ranger District. As a hot shot, Craig regularly saw what types of conditions a wildfire thrived in, and what types of treatments helped to slow or stop a wildfire. With additional knowledge of wildfire potential in residential areas, Craig launched Wildfire Home Protection after spending several years as a structural firefighter.

When Craig launched Wildfire Home Protection a few years ago, three-acre projects felt big. Today, the company likes to look for projects that are 50 to 150 acres in size. While these may seem small, a few contractors all working on projects of that size can really start to add up. A great year for Wildfire Home Protection is one when the crew takes on 1,000 acres of work.

The past few years have demonstrated a number of challenges. Some, such as higher fuel costs and an unexpectedly cold spring in 2022, altered anticipated work timelines, making once-lucrative projects barely break even.

Craig noted that government-driven funding cycles could prompt busy periods and lulls that can be difficult for smaller contractors like Wildfire Home Protection to plan and prepare for. Projects with longer time-spans to complete, such as grant-funded work, can help pad leaner times with additional steady work. Having partners who care about the work and are committed to the final project can help an entire team stay motivated.

The Nature Conservancy has been an integral partner for Craig and his crew. Through this partnership, Wildfire Home Protection worked on projects in and around the central Washington cities of Ronald, Cle Elum, and Roslyn, where TNC owns several thousand acres. Wildfire Home Protection has also been brought in on other TNC partnership projects throughout the region, including collaborations with the City of Roslyn as well as DNR to complete fuel reduction, forest restoration, and community resilience treatments.

Contractors like Wildfire Home Protection are figuring out their place within the all lands, all hands equation of forest management in Washington. As we all move forward, Craig believes that we need to all stay nimble, communicate about our challenges, and try new solutions to fit each unique need.

WHEN CRAIG LAUNCHED WILDFIRE HOME PROTECTION A FEW YEARS AGO, THREE-ACRE PROJECTS FELT BIG. TODAY, THE COMPANY LIKES TO LOOK FOR PROJECTS THAT ARE 50 TO 150 ACRES IN SIZE.

CONNOR CRAIG




HAVING AN ECONOMICALLY VIABLE OPTION FOR SMALL DIAMETER TREES MAKES FOREST HEALTH PROJECTS MUCH MORE ATTAINABLE FOR A VARIETY OF LANDOWNERS.

Above: Some of Wildfire Home Protection's equipment in action at a work site.



Mass Timber in Northeast Washington: Helping a New(ish) Material Thrive

 **Highlighted Forest Action Plan Priority Action:** Support innovation in the forest products industry that increases the use of forest health treatment byproducts such as small-diameter wood, and support development of markets for mass timber, biochar, and biofuels.



Russ Vaagen first heard about mass timber in 2005, yet it wasn't until 2014 that he realized it was going to be a big market that he needed to be part of. Vaagen spent

about 10 years talking with different equipment vendors, industry experts, and going to events to better understand mass timber and its possibilities. After a 2015 visit to Europe to see several mass timber projects, Vaagen was officially hooked, and committed to building a state-of-the-art facility in Colville, his hometown in Northeast Washington.

Originally pioneered in the 1990s in Austria, mass timber is a process that uses layers of wood and adhesives (like glue and nails) to produce a wood product that can be made into beams, panels, and posts in building construction. Because layers of wood are glued together, mass timber facilities can use much smaller diameter of trees than a traditional timber mill. Given Washington's abundance of overstocked stands in need of thinning, having an economically viable option for small diameter trees makes forest health projects much more attainable for a variety of landowners.

Mass timber is incredibly strong and can be used for construction in ways similar to steel and concrete. Largely fire-resistant, mass timber also retains much of the carbon that was captured in the wood when part of a tree, making it much more environmentally friendly than resource-heavy materials, like steel and concrete. Workers can cut mass timber pieces to size on location, making construction much quicker and more accurate. For example, construction of a four-story college campus building can start in the winter and ready to occupy by the next fall.

Vaagen launched his mass timber facility, Vaagen Timbers, in 2019. As part of a family that has owned a traditional lumber mill for decades, he saw the need for developing some new skill sets within the mass timber industry. For example, after first launching Vaagen Timbers, he found himself having to explain how mass timber materials go together on the build site. He also realized he needed to do more marketing of mass timber, as the product was not widely known. The initial lack of understanding led to business quarters where jobs came to Vaagen Timbers in waves; Vaagen would have one project, wait a bit, then find another. However, after three

short years, Vaagen Timbers now has projects in the pipeline many months into the future, and employs two full shifts of workers per day.

While Vaagen doesn't believe that a forest collaborative is a necessity for a successful mass timber operation, the culture that developed through the Northeast Washington Forestry Coalition shows the power of bringing everyone to the table. While builders and construction companies are often seen as the main relation for timber products, Vaagen knows that by building relationships with everyone involved – architects, urban planners, environmental groups, scientists, ecologists, and industrial landowners – operations have a much better chance of being sustainable. He also values partners who approach work from a collaborative, community-driven standpoint. Though some potential partners stated they would only come to collaborative meetings or spaces after development of a successful project, Vaagen believes this doesn't allow a partner to understand what will provide the best value for the community.

Nationwide, mass timber continues to grow in popularity. According to PBS News Hour, while there were only 26 mass timber structures erected in 2013, there were 576 under construction in November 2021. Vaagen recommends having a firm understanding in forestry, the lumber industry, manufacturing, and construction – to name a few – before getting started.

LARGELY FIRE-RESISTANT, MASS TIMBER ALSO RETAINS MUCH OF THE CARBON THAT WAS CAPTURED IN THE WOOD WHEN PART OF A TREE, MAKING IT MUCH MORE ENVIRONMENTALLY FRIENDLY THAN RESOURCE-HEAVY MATERIALS, LIKE STEEL AND CONCRETE.





STEWARDSHIP OF FAMILY AND WORKING FORESTS

// Somewhere between 25,000 and 50,000 small forest landowners are likely anticipating selling all or some of their forest land in the coming 10 years. "

WASHINGTON'S SMALL FOREST LANDOWNERS IN 2020: STATUS, TRENDS, AND RECOMMENDATIONS AFTER 20 YEARS OF FORESTS AND FISH

Working forests are managed for a diverse suite of values – wildlife habitat, aesthetics, privacy, sustainable timber production, carbon sequestration, and water. Preserving working forests, largely held in private ownership, is critical to maintaining overall ecological function of forest landscapes and supporting the state's economic, social, and cultural values. Engaging with private landowners to better understand their management priorities and barriers and successfully meet their land management objectives is an important step in maintaining the state's working land base.

According to recent research, family circumstances as well as financial considerations are top reasons why smaller forest landowners decide to sell their forestland. These sales are often not planned, and may be due to things like deaths of key family members, or additional socioeconomic factors in the family's community.

Their voices are a needed piece of how we collaboratively decide what forest resilience looks like in Washington. Small forest landowners own approximately 15 percent of Washington's forested acres. In this section of the report, we highlight a few new tools and methods, as well as expansion of some services, in support of our family and working forestland owners.



Launch of Western WA Financial Assistance for Wildfire Resilience and Forest Health

Highlighted Forest Action Plan Priority Action: Increase the number of landowner assistance forest experts at DNR (particularly in western Washington), conservation districts, and in the Cooperative Forestry Programs Section. Extension to provide on-the-ground support to non-industrial forest owners. Work with WSU Extension and conservation districts to identify capacity needs and support future funding requests to secure necessary resources.

The DNR Service Forestry Program launched its Financial Assistance for Wildfire Resilience and Forest Health program in Western Washington on August 1, 2022. Formerly known as cost-share, the program helps non-industrial, private forest landowners mitigate the cost of forest health treatments to help improve the health and resiliency of their land. Projects can include work such as non-commercial thinning in overstocked stands, removing ladder fuels to reduce crown fire risk, and removing trees damaged by insects and disease. Landowners must first reach out to their local service forestry team to receive a property assessment and consultation before submitting their application.

Prior to August, only Eastern Washington landowners were eligible to participate in the program. Thanks to the addition of service forest capacity in 2022, staff and support for overseeing and managing financial assistance applications are now able and ready to serve the needs of small forest landowners across the state.

The response from landowners has already demonstrated the long-overdue need for this program expansion. Landowners have been reaching out to staff in all four DNR regions (Northwest, South Puget Sound, Olympic, and Pacific Cascade) in Western Washington to ask about opportunities to implement forest health and wildfire resilience projects that will help make their forestlands successful over the long-term.



**For more information
on the program, please visit:**
dnr.wa.gov/cost-share



**PROJECTS CAN INCLUDE
WORK SUCH AS NON-
COMMERCIAL THINNING IN
OVERSTOCKED STANDS,
REMOVING LADDER FUELS TO
REDUCE CROWN FIRE RISK,
AND REMOVING TREES
DAMAGED BY INSECTS AND
DISEASE.**



Landowner Assistance Portal

Welcome to DNR's new Landowner Assistance Portal - a one-stop shop for a small forest landowner's needs. Select links below to explore topics related to forest health, financial and technical assistance, education and regulations. Contact our team of service foresters at 1-800-523-TREE (8733).

CONTACT US

Resources for Managing My Forest



Community Forestry Assistance Grants

Conservation Easements

Financial Assistance for Fish Passage

Keeping My Forest Healthy



Aquatic and Riparian Health

Climate, Environment and Carbon

Fuels Management

Education and Training



Classes and Videos

Information for New Landowners

Find Your Forester

Frequently Asked

Permits and Regulations



Burn Permits

Commercial Forest Management

Forest Practices Applications or Alternate Plans

LAUNCH OF LANDOWNER ASSISTANCE PORTAL

Highlighted Forest Action Plan Priority Action: Continue to provide science-based education and technical assistance to as many landowners and land managers as possible through close cooperation with stewardship programs, universities, and other agencies.

Imagine going to a restaurant, sitting down, and being asked what you'd like to eat...but the restaurant has no menu. Until recently, this situation was analogous to the predicament many forest landowners found themselves in – many know that they are hungry for help, yet aren't sure what assistance is available to them.

In comes the new Landowner Assistance Portal, providing a one-stop online shop – or menu – of all of the different landowner assistance programs and opportunities that Washingtonians can use to better understand, steward, and manage their properties.

The portal is broken into four different sections:

Resources for Managing My Forest outlines the many different programs that help landowners assess their land, as well as processes they can take to develop more robust plans and management protocols. It also includes links to grants and

financial assistance programs that help mitigate costs of implementing management goals.

Keeping My Forest Healthy includes information on just about every forest health-related area of concern, from how to request a visit for a potential tree pest infestation to information on aquatic health and riparian areas in and around a forested parcel.

Education and Training provides a library of informational videos and resources, as well as information specifically tailored to the freshly-minted small forest landowner. Landowners can also find out who their local regional forester is and research geographically specific advice, up-to-date opportunities, and tailored information.

Permits and Regulations provides information on the all-important applications necessary to be in compliance for various forest activities landowners may initiate.

The portal has already shown itself to be a success. Within the first month of its launch, the Landowner Assistance Portal garnered more than 3200 views, with an average site time of more than 1 minute (which, translated to search-engine-optimization speak, is a long time). Out of the more than 900 webpages on the DNR website, the portal is currently the 13th most popular webpage on the entire site.

To check the portal out for yourself, please visit: dnr.wa.gov/LandownerAssistancePortal.



SERVICE FORESTRY SUCCESS STORY

LEVERAGING RESOURCES TO BUILD COMMUNITY CAPACITY AND RESILIENCY



Highlighted Forest Action Plan Priority Action:

In priority landscapes, work with landowners, conservation districts, fire districts, partner organizations, and agencies to coordinate activities across borders and select the most effective treatment approaches to meet the needs of the landscape and landowner objectives.



Close experiences with a wildfire are often what prompt communities to take action to reduce wildfire risk. In the case of the Edelweiss neighborhood in northern Okanogan County, they had two – the Cub Creek 2 and Cedar Creek fires – in 2021.

The risks Edelweiss faced were not a secret prior to 2021. The community developed a community wildfire protection plan (CWPP) in 2006, and had a wildfire risk assessment conducted by DNR's regional service forester (formerly known as a landowner assistance forester) and the Okanogan Conservation District (OCD) in 2018. In 2019 the community became a Firewise USA Site. The area is designated as having high fire risk within Okanogan's countywide CWPP. For the past two decades, many residents have had individual property assessments and have participated in fuel reduction projects through both the OCD and DNR.

The 2021 wildfire season was a wake-up call that prompted action. Something needed to be done, and on a much larger scale than previous parcel-by-parcel projects. The need to lower the intensity and severity of any future fire was immediate in the Edelweiss neighborhood, but any fuel reduction work faced many challenges.

Catherine Humblet's property, much like her neighbors, features steep slopes and is directly next to national forestland. Humblet's and many of the neighboring lots had been pre-commercially thinned 20 years prior, but still had high over-story stocking levels of up to 300 trees per acre. Nearly all of the small, non-commercial trees had been removed, making additional cost-share projects with OCD and DNR not viable, because DNR's Financial Assistance for Wildfire Resilience and Forest Health program only pays for the removal of trees less than eight inches in diameter.

DNR employee Jake Hardt, then a service forester, recognized removing approximately 50 percent of over-story trees greater than eight inches in diameter would be necessary in order to meet the crown fire risk reduction targets, as well as larger forest health objectives on the project.

Having worked on projects examining economies of scale, Humblet saw a potential opportunity to collaborate with her adjacent neighbors. With nine forested acres between them, Hardt saw the opportunity for a holistic project within the neighborhood. After reaching out to the nearby Pine Forest neighborhood, which had completed a similar project, Humblet and three of her neighbors decided to attempt a commercial sale across their properties.

DNR's new Community Resilience Program, in conjunction with Service Forestry, was able to fund a pilot program to make funds available to help offset the cost of the project. The costs of fuel, labor, and logging, as well as distance to mills and the depressed pine market, made the commercial sale non-profitable, but DNR funding greatly reduced the out-of-pocket expenses.

Humblet attributes the success of the project to a few factors. Prior to the sale, neighbors met virtually with their chosen contractor, Shane Knowlton. The opportunity for landowners to ask questions, express concerns, and better understand how logging operations would progress helped everyone to be on the same page when the sale happened.

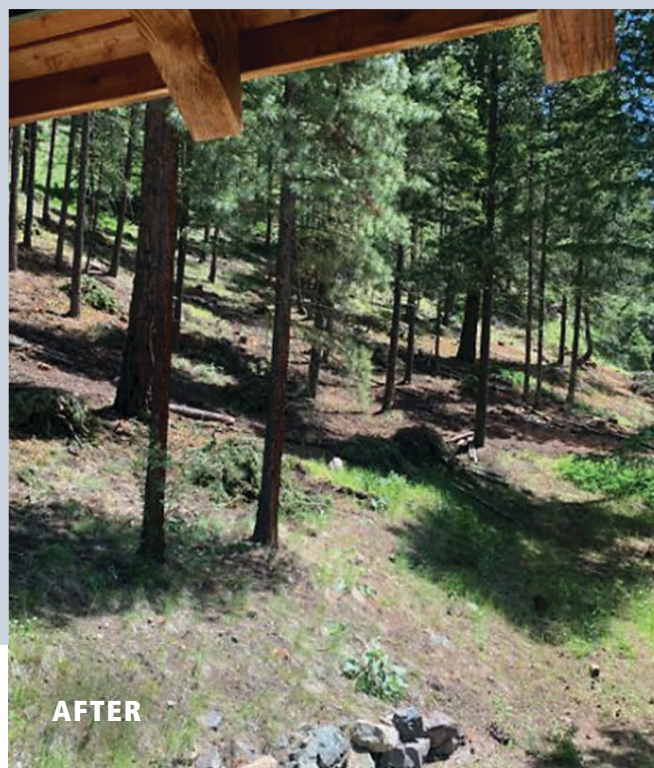
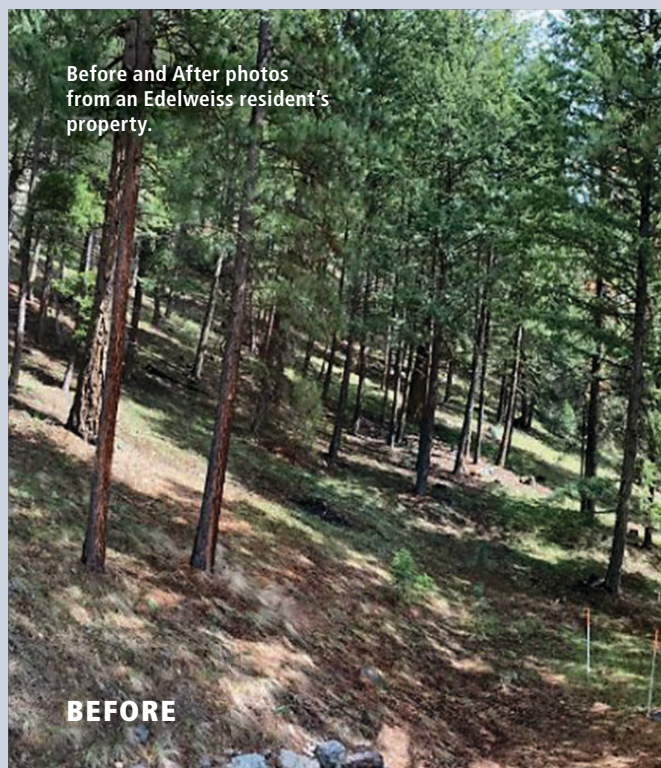
Neighbors also helped Shane mark the timber prior to the sale. Marking timber provided a lesson in forest management as well as an ecology for Edelweiss residents. The process also helped dispel preconceived notions of forest health, and helped residents see how reducing density could greatly benefit the "leave" trees in a thinning.

The nine-acre commercial sale helped to offset the overall costs for tree removal by more than half. By selling the 44.85 thousand board feet of timber, the project also kept these trees from becoming burn piles and kept the stored carbon in the wood rather than releasing it into the atmosphere.

The project had a major effect on the community and surrounding area. The lessons the community learned from this project gave them the confidence to apply for a Community Wildfire Defense Grant (CWDG). While most applicants are large agencies or county governments, the unique knowledge and previous action of the Edelweiss Community gives them a shot at a successful application.



CATHERINE HUMBLET



CATHERINE HUMBLET







WILDLIFE AND SALMON RECOVERY

**BY RELOCATING
THESE SPECIES
BACK INTO THEIR
NATIVE RANGES,
THEY CAN ACT AS
AN ADDITIONAL
HAND IN OUR
FOREST HEALTH
GOALS FOR
WILDLIFE,**

Conservation and protection of fish and wildlife is a priority identified in the state's Shared Stewardship Investment Strategy and a common theme across strategic plans and reports that guide agency action related to forest conservation and management. The Washington State Wildlife Action Plan identified 268 species of greatest conservation need (SGCN) that are forest-dependent. Examples include salmon, steelhead, bull trout, northern spotted owl and grizzly bear. Several of these species are listed for protection under the federal Endangered Species Act (ESA). In some cases, threatened wildlife can act as "canaries in the coal mine," alerting us to ecosystem-scale issues in need of immediate attention.

Some of this work centers around preserving habitat. For others, such as our many bat species, it's figuring out ways to keep colonies and individual animals alive when faced with a myotis-specific pandemic.

There's also hope through reintroduction. Past conservation measures (or the lack thereof) have made some species locally extinct in our region. By relocating these species back into their native ranges, they can act as an additional hand in our forest health goals for wildlife, helping to balance the populations of flora and fauna the system depends on.

White-Nose Syndrome: An Established Pandemic with Unique Challenges and Solutions

Highlighted Forest Action Plan Priority Action: Work with WDFW to ensure adequate support, decision-support tools, funding, and integration of direct conservation actions related to forest management including law enforcement, habitat assessments, and conservation education.

Although white-nose syndrome (WNS) has been affecting bat populations in the eastern United States since 2006, the disease was not detected in the Evergreen State until a decade later, when it was discovered in a Little Brown Bat (*Myotis lucifugus*) near North Bend.

Because the disease was well-documented prior to arriving in Washington, Washington's bat biologists have learned from others what's worked – and what hasn't. For example, it's now clear that the fungus – scientific name *Pseudogymnoascus destructans*, or Pd for short – spreads from bats interacting with other bats or environments containing Pd. Humans can also inadvertently spread Pd through footwear or clothing that has entered bat roosts or environments containing Pd.

The fungus will often infect bats during inactive hibernation periods. The fungus invades healthy tissue, which causes the bats to become more active during hibernation months and burn through their fat reserves, eventually killing the bats. If an infected bat survives the winter, it can then carry Pd on its fur and wings to other roosts, making it difficult to contain the fungus once it is present in a colony. When infected, bats will have a white fuzz from the fungus on their faces and wings.

Outreach has been key to helping slow the spread of the disease in the United States. Researchers, biologists and recreationalists who visit bat roosts have educated others about the importance of cleaning equipment and footwear between cave visits. Outreach efforts around reported sightings of dead bats between December and May has also helped pinpoint WNS outbreak locations.

However, Washington's bat ecosystems are notably different from those found in the eastern United States, and require some out-of-the-box, creative solutions for WNS tracking and treatment.

For example, many Washington bats utilize talus slopes and cliffs for hibernation, rather than caves. At this point, it's unclear whether these environments are cold, dark, and damp enough to effectively spread Pd. Additionally, these hibernation environments tend to house much smaller roosts – singles and small groups often hibernate together – so spread of WNS occurs at much smaller scales, but also makes tracking bat colony numbers less useful as a metric for Pd-related mortality.

ERIC KILBY



CONFEDERATED COLVILLE TRIBES BRING CANADA LYNX BACK TO NORTHEAST WASHINGTON

Wildlife & Salmon Recovery Goal 3: Assesses species and landscape conservation needs using species recovery and management plans, habitat conservation plans, biodiversity conservation frameworks, habitat connectivity analyses, and other data.



Canada lynx (*Lynx canadensis*) was listed as threatened in Washington in 1993, and added to our endangered species list in 2016. Pressures from

wildfires as well as intentional and accidental hunting putting major stress on the population, causing it to decline.

As a mid-sized species, Lynx provide balance in their native food chain. Lynx prey on smaller and mid-sized species such as hare and deer, helping to keep these species populations from growing at unsustainable rates. Lynx's native habitat in Washington is largely in the North Cascades section of the Cascade Range, as well as a few locations in the Kettle River Range and the Selkirk Mountains.

In 2022, the Confederated Tribes of the Colville Reservation released 10 lynx back into the Kettle Range. The effort is part of a five-year program to release 10 lynx annually back into that habitat. Since 2021, the Colville Tribes have released 17 lynx back into the Kettle Range.

**WASHINGTON'S BAT
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TRACKING AND
TREATMENT.**

Bat being pit-tagged for WNS treatment trial.





Climate change adds another layer of complexity in terms of future planning for bat health. Projections show conditions will continue to get hotter and drier for longer periods, which may mean that some warm-season maternity roosting spots are get too hot for bats, and force them to leave summer colonies much earlier than they would otherwise. Climate change also affects food and water – changes to insect abundance can make food scarcity a real threat for bats. A recent heat-related algal bloom in a Washington lake killed approximately 100 bats that drank the contaminated water.

However, there is some hope. Washington bats tend to move into maternity roosts in the summer – and many of these can be found in human-centric places, like under bridges, in barns and in attics. Monitoring these sites can be easier than monitoring caves and have benefits for trying novel treatment options. Wildlife biologists from the U.S. Geological Survey are currently administering a vaccine to bats that they hope will prevent WNS. All three test sites for the vaccine are in barn or attic roosting sites. Similarly, a spray-on probiotic developed by a team in British Columbia can be safer to test in human-structure roosting sites: Spraying the probiotic in a cave could have detrimental effects on other wildlife dependent on the same cave ecosystem.

Bats are valuable members of our ecosystem. They are major predators of forest and agricultural pests, pollinators, and they serve as indicators of environmental health. To help bats, you can do one or more of the following:

- Report groups of bats you see using the online observation reporting form. This information will help us understand our bat populations and monitor WNS in Washington.
- Avoid entering areas where bats may be living to limit the potential of transmitting the Pd fungus, and to avoid disturbing vulnerable bats.
- Get involved in bat conservation by improving bat habitats. This can include reducing lighting around your home, minimizing tree clearing, incorporating old and damaged trees into your property when possible, and protecting streams and wetlands. You can also install a bat box.



For more information on living with bats,
visit: wdfw.wa.gov/species-habitats/living/species-facts/bats

SHARED STEWARDSHIP SUCCESS STORY

SHERMAN CREEK PROJECT



Highlighted Forest Action Plan Priority Action:

Restore and protect ecosystem health to support fish and wildlife habitat and biodiversity.



Originally purchased in 1948, the Sherman Creek Wildlife Area (found in the northeast corner of Ferry County) is a critical winter range for Washington's

deer population. Encompassing 8,782 acres across five parcels, Sherman Creek is also an important space for maintaining other big game populations, as well as managing for a number of upland birds and improving fish-bearing streams.

The dynamic nature of Sherman Creek warrants stewardship and management that is equally as multifaceted. For example, after the 2006 Bisbee Mountain Fire, WDFW staff prepared a timber sale that included about 500 acres of fire-damaged lands for timber salvage. The sale, which encompassed 3,955 acres, was implemented to improve forest resilience against future wildfire, better protect stream corridors throughout the wildlife area, and to improve wildlife habitat for a variety of species.

Through shared stewardship, WDFW is currently working on several fish passage improvements throughout Sherman Creek and its associated tributaries. Two fish-passage structure bridges will be installed along U.S. Highway 20 – one at milepost 329.3 and the other at milepost 329.6. These structures will bring three-quarters of a mile of Sherman Creek back into its historic stream channel, help improve habitat conditions, and eliminate adjacency issues between the road and the stream. Culvert removal on Milk Creek at milepost 328.69 along U.S. 20 will occur in tandem with 200 feet of channel development connecting Milk Creek to Sherman Creek. This re-route and connection will restore 1.3 miles of fish passage along Milk Creek.

With the project only at 30 percent completion for design as of October 2022, additional survey data, and NEPA results are necessary for implementation. Data collection for the project is planned for the fall and will complement the project's geotechnical survey, which is expected to be completed by December 2023.



SHERMAN CREEK IS AN IMPORTANT SPACE FOR MAINTAINING OTHER BIG GAME POPULATIONS, AS WELL AS MANAGING FOR A NUMBER OF UPLAND BIRDS AND IMPROVING FISH-BEARING STREAMS.

Above: The Sherman Creek Unit is managed primarily to protect deer winter range habitat, but the unit contains many wildlife species that are dependent on managed Ponderosa pine forest habitat.

CONFEDERATED TRIBES OF THE COLVILLE RESERVATION



The Colville
Confederated Tribes
replaced a fish culvert
with a new bridge to
improve fish passage
on a Nanamkin
Creek crossing. Photo
courtesy the
Confederated
Tribes of the Colville
Reservation.



**SELECTIVE
THINNING AND
HARVEST TARGETS
CAN KEEP FOREST
AND VEGETATION
COVER AT LEVELS
THAT HELP THESE
AREAS RETAIN
MOISTURE LONGER,
WHILE PURPOSEFULLY
CREATING AREAS
OF SHADE CAN
HELP KEEP FOREST
UNDERSTORIES
COOLER.**

WATER QUANTITY AND QUALITY

Vulnerability to drought is a large driver of selection for many of Washington priority landscapes. Drought can result from natural phenomena, such as lack of rainfall or warming temperatures. It can be exacerbated by factors such as a landscape's reduced ability to retain water, or multiple competing demands on existing water supplies.

According to Climate Central, Washington faces the third-largest drought threat in the United States. The spring and summer of 2021 were some of the driest on record for our state, and the resulting droughts will affect forest ecosystems in the years to come. Unseasonably dry winter and fall months in 2022, while more mild in comparison to 2021, demonstrated our inability to depend on future seasonal wet periods. Future drought-related mortality and increased incidence of insects and disease across Washington's forests are expected to occur as a result of stressed and weakened trees.

Forest health treatments can help with both water quantity and quality. Selective thinning and harvest targets can keep forest and vegetation cover at levels that help these areas retain moisture longer, while purposefully creating areas of shade can help keep forest understories cooler. Please see this year's Forest Health Assessment and Treatment Framework Report for details on recent research on how forest health treatments affect snowpack retention.

Innovative solutions can help riparian areas do more than just slow water down. More than 34 beaver dam projects across Central and Eastern Washington, many led by the Confederated Tribes of the Colville Reservation, Trout Unlimited, and Cascadia Conservation District, are helping to improve riparian and waterway health by slowing water down, which can help reduce sediment removal, increase areas of shade (cooler waters) and create potential habitat.



A Colville Confederated Tribes Natural Resources staff member actively weaving a beaver dam analog (BDA).

Missing Pieces: Confederated Tribes of the Colville Reservation Use Multimodal Methods to Restore Waterway Health

Highlighted Forest Action Plan Priority Action: Improve water supply through forest management and restoration practices that improve water-holding capacity in watersheds and help protect water quality from increased temperature, erosion, and associated pollutants.



Centuries of one-track forest management have wreaked havoc on many of our terrestrial systems, as well as their associated waterways and riparian areas.

As most of us are now aware, taking certain players or activities out will have ripple effects across the entire system.

The Confederated Tribes of the Colville Reservation – a reservation with membership made up of 13 different bands with traditional territories stretching from British Columbia to Oregon, and from Wenatchee eastward to the Idaho Panhandle – are working to bring back those removed players from the environments they have stewarded since time immemorial.

Beavers

A true keystone species, beavers provide a lifeline for many aquatic species as well as many important waterway processes. Ponds created by beaver dams help build up soil and nutrients in waterways, which can help rivers and creeks withstand and thrive in potential flood and drought conditions. These same dams and ponds also filter the water, helping to clean out impurities as the water travels downstream. Salmon and steelhead are also dependent on beaver habitat for their own habitat and well-being; declines in beaver populations parallel declines in fish populations across many waterways.

In partnership with Trout Unlimited, staff from the Colville Confederated Tribes have been developing analog beaver dams in the Upper Columbia Basin to help mimic and restore some of these lost properties. Analog dams are developed by pounding wood into the stream, and then weaving tree branches through the posts. Project staff believe the work will take several years, in hopes that beavers will take over these pre-fabricated homes. Project implementation has already proven fruitful: the 14 beaver dam analogs along the South Beaver Creek and Meadows are retaining additional surface water, with channels starting to return to their natural levels.

Downed Wood

On the Twisp River Watershed, the Colville Confederated Tribes restored 5.5 miles of aquatic habitat by adding small and large wood to sections of both Little Bridge Creek and the Twisp River. For several decades, the popular management decision was to remove downed wood from streams. Wood was seen as dangerous debris, a force that increased flood risk and made rivers harder to navigate. A number of issues arose after wood was pulled from waterways.

Downed wood provides a bevy of benefits in river systems. Trees and logs provide shade and protected spaces for fish and fauna, including recently-born salmon alevins and fry. Wood also helps create waterway complexity by slowing waters down, pooling it and creating deeper sections of the waterway, which forces water to move in different directions and to different areas. For both Little Bridge and the Twisp River, additional aquatic complexity provides perfect conditions to welcome a higher number of ESA-listed fish species that both waterways support.

Staff from the Colville Confederated Tribes harvested the wood for the project across 20 acres of US Forest Service land. All 20 acres were considered overstocked. More than 4,000 trees were cut, then transported via helicopter to be placed in the waterways.

PONDS CREATED BY BEAVER DAMS HELP BUILD UP SOIL AND NUTRIENTS IN WATERWAYS, WHICH CAN HELP RIVERS AND CREEKS WITHSTAND AND THRIVE IN POTENTIAL FLOOD AND DROUGHT CONDITIONS.

Below: Photo collage from the wood placement project.

CONFEDERATED TRIBES OF THE COLVILLE RESERVATION





Aquatic Restoration: A Necessary Complement to Terrestrial Work

Water Quality and Quantity Goal 2: Lands and waters remain productive and adapt to changing conditions, including climate change and a growing population. Expand efforts to use natural systems to buffer against floods, stormwater, sea level rise, and droughts stemming from changing conditions..

Assessing aquatic restoration needs in priority landscapes and implementing aquatic restoration treatments at a watershed scale are vital to achieving the goals of the 20-Year Forest Health Strategic Plan: Central and Eastern Washington. Aquatic landscape evaluations provide a technical framework for prioritizing and implementing watershed restoration that complements and enhances the benefits of landscape-scale forest restoration.

Aquatic restoration generally refers to active management activities undertaken by resource managers to recreate or mitigate natural hydraulic and hydrologic processes that have been augmented or damaged by past management activities. Streams, rivers, and lakes are distinctive and biologically complex areas with unique disturbance and successional trajectories directly shaped and altered by the conditions of the surrounding watershed.

In areas where aquatic evaluations indicate natural process impairments, practitioners use a suite of innovative treatment types to restore natural hydraulic and hydrologic processes, which maintain water quality and support critical aquatic habitats.

Elements considered in aquatic evaluations include:

- **Processes (What types of natural processes create and sustain water resources and aquatic habitats that support regional priorities like clean water and salmon runs?):** Aquatic systems are highly dynamic and responsive to disturbances, so it is important to think about the state of the system in terms of natural processes like flooding, sediment recruitment and transport, channel evolution, and riparian and floodplain interactions. Restoration practitioners use typical diagnostic indicators to track the status of natural processes operating in an aquatic landscape.
- **Species Distributions (What species occur in the landscape's aquatic environment? What are the distributions of these species across the landscape?):** Many aquatic restoration actions target maintaining or improving conditions for aquatic life, such as fish and amphibians. Endangered and threatened salmon and steelhead habitat restoration receives attention because of the need to increase the capacity of aquatic habitats to support larger fish populations and increase population

resilience from natural and human-caused disturbance events. Salmon and steelhead habitat restoration typically involves instream and floodplain complexity treatments like installing woody debris, reconnecting side channels and working to incorporate ground water as a connected habitat feature.

- **Natural Function (Are natural processes functioning similar to historic conditions? If not, are changes to natural processes impairing conditions to priority aquatic resources like salmon rearing and spawning habitat?):** Functional rating criteria for typical diagnostic indicators have been developed to take into account how Eastern Washington aquatic systems historically functioned prior to modern human disturbances and alterations. These criteria provide a starting point with which to compare the summarized indicator metrics with technically referenced target conditions. Outputs from this process indicate areas where specific process pathways and indicators are not functioning, or are at risk of being lost.
- **Project Identification (What actions or interventions can be reasonably taken to overcome aquatic resource impairments or to restore natural processes?):** Once collected, data can be summarized by stream-reach specific units, which enable the comparison of indicator metrics to other analog conditions and between analysis ranges. Summarizing the collected data into these geographically distinct units allows land managers to see the aquatic system indicator conditions at both the reach and aggregate landscape scale, which informs treatments needs and the viability of different treatment types.

Once evaluations are complete, the data can be used by aquatic restoration practitioners to efficiently focus planning restoration actions. For this task, teams of biologists, hydrologists, professional engineers, and other technical professionals begin to focus site-specific resources to develop discreet aquatic restoration actions.

Because aquatic restoration occurs in sensitive, dynamic environments, extensive environmental analysis is required for each proposed restoration action, requiring federal and state agency review and permits. Once implementation begins, much of the work focuses on protective actions to isolate the restoration work from adjacent sensitive areas. Coffering in water bodies, silt fencing, turbid water control, and fish removal are major project elements that require skillful planning and execution.

Many restoration projects require the use of heavy equipment to conduct targeted grading, excavation, wood and tree placement, culvert construction, and other engineered project tasks. Using construction equipment in the aquatic environment takes highly skilled operators that understand project permitting requirements and how to operate in a manner that minimizes unnecessary disturbance.

YAKAMA NATION

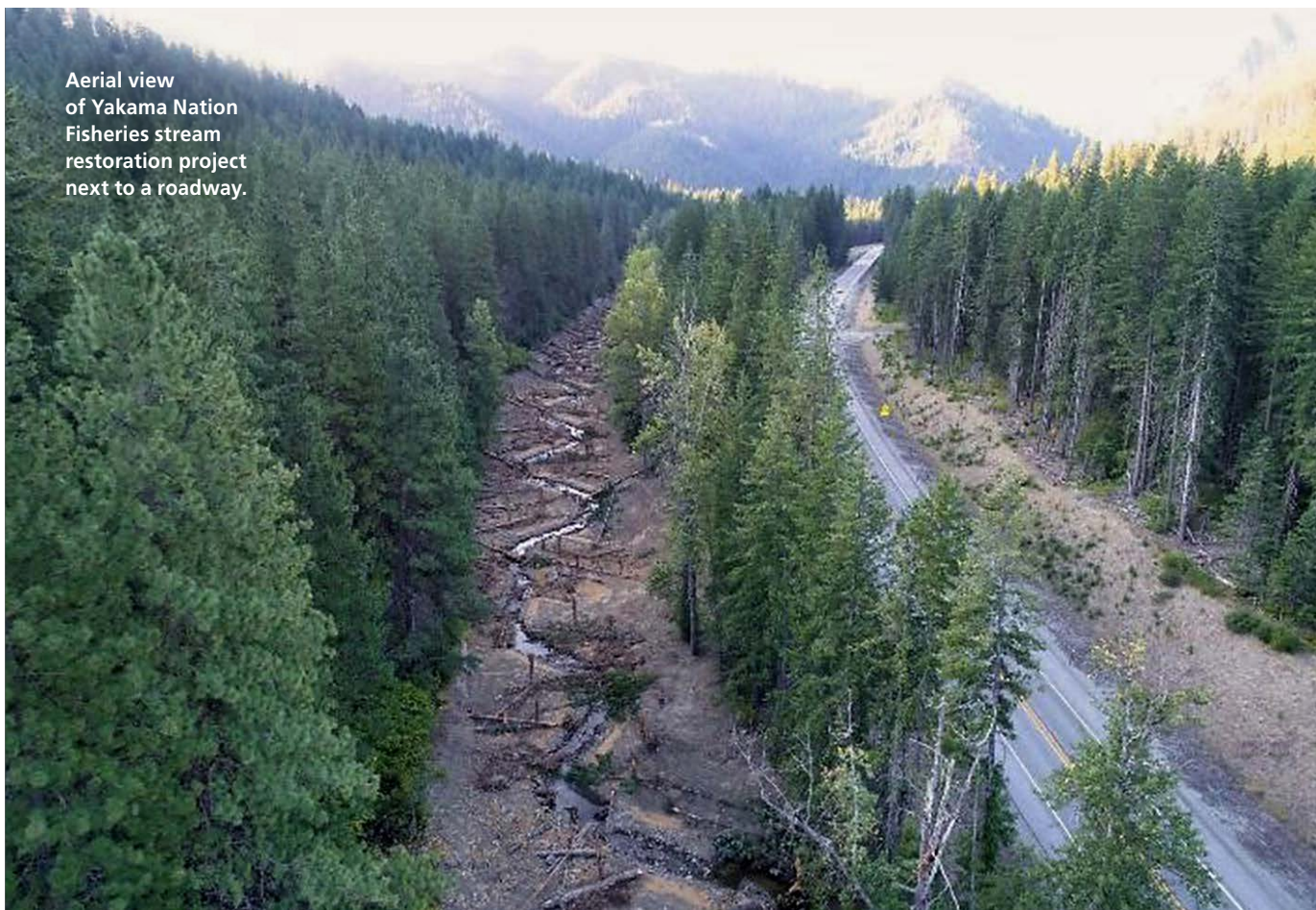
Aquatic restoration work requires skilled operators who understand project permitting requirements, as well as low-impact operational procedures.



WATER QUANTITY AND QUALITY

YAKAMA NATION

Aerial view of Yakama Nation Fisheries stream restoration project next to a roadway.



Restoration site on the Snohomish Watershed, efforts led by the Tulalip Tribes.



DNR Watershed Resilience Action Plan



Highlighted Forest Action Plan Priority Action:

Invest in scientific research to better understand the interactions between forest vegetation conditions and water to improve our understanding of how forests can be managed to increase water quantity in rivers and streams.

There are a lot of plans, policies, and programs for salmon and watershed health already in existence, so adding another one to the mix might feel repetitive. The idea behind DNR's release of the Watershed Resilience Action Plan (WRAP) in February 2022 was not to replicate any of the current plans, but to better outline where DNR's areas of expertise and access to watersheds can best assist and amplify current efforts to improve watershed resilience.

The plan focuses on the Snohomish Watershed (Water Resource Inventory Area 7), which overlaps with the Forest Action Plan's Snohomish Priority Landscape, in hopes that efforts here can be replicated in other watersheds. An area rich in diverse forest habitat, the Snohomish Watershed is also an important spawning and rearing habitat for many fish species, most notably several species of salmon and trout. For example, the Skykomish River's Chinook salmon population is currently below 10 percent of its historic mark.

Due to its location between the Cascade Mountains and the northern reaches of the Seattle Metropolitan area, the Snohomish Watershed also faces huge development pressure as human populations continue to surge. The number and variety of factors affecting the Snohomish Watershed make it a complicated beast – but also a wonderful pilot area to develop a comprehensive, yet adaptable, resilience framework for DNR.

WRAP outlines five larger goals:

- **Protect and clean up aquatic habitat;**
- **Restore, conserve, and connect forests and riparian habitat;**
- **Revitalize urban forests and streams;**
- **Engage and invest in communities;**
- **Reduce and combat climate impacts.**

This can manifest in several ways for on-the-ground implementation. For example, fish passage barriers are rampant across the state. While Washington has a removal program, the list is long, and the checkerboard of land ownership in many watersheds makes accessing these barriers a long and arduous process. Many of these barriers also exist on lands owned by small private landowners.

Through programs like Service Forestry and programs in the Forest Regulations Division, DNR has developed relationships with many of these small forest landowners (SFLOs). Within WRAP, a primary goal is to work with more SFLOs, specifically within the WRIA 7, to identify and survey fish barriers, add them to the Family Forest



Fish Passage Program (FFPP) list, while also working to identify new sources of funding for barrier removal.

One clear distinction with this additive effort: these additional SFLO sites will not re-prioritize the FFPP existing list. The hope for this additional effort is to show the need for additional funds to tackle this gargantuan need.

DNR's access to trees provides the opportunity to heighten efforts for implementing large woody debris dispersal into rivers and streams. DNR is currently working to identify all potential mechanisms to provide large woody debris materials for in-stream installations. The project hopes to improve the pace of in-stream large woody debris installations for salmon recovery in the Snohomish Watershed, with the goal of co-locating DNR's wood debris supply with restoration need.

With partners in the watershed, DNR successfully applied for a 2022 Western Landscape-Scale Restoration Grant. The successful application focuses on the Middle Snohomish, a section of the watershed that sits in both Snohomish and King counties. Co-led by the Tulalip Tribes, Mountains to Sound Greenway Trust, and the Emerald Alliance, project partners will work over the next three years to remove noxious weed species, restore native species cover along important riparian areas bordering heavy human development, improve water quality, and improve floodplain habitat for both native plant and animal species.

Moving forward, DNR hopes to use the framework tweaked through the plan update to develop shorter plans for other watersheds throughout the state.

WHILE WASHINGTON HAS A REMOVAL PROGRAM, THE LIST IS LONG, AND THE CHECKERBOARD OF LAND OWNERSHIP IN MANY WATERSHEDS MAKES ACCESSING THESE BARRIERS A LONG AND ARDUOUS PROCESS.



Contact

DNR welcomes input and ideas about how to continue to accelerate implementation of the action plan. For more information about Washington State's 2020 Forest Action Plan and to learn more about this annual report visit: dnr.wa.gov/ForestHealth



Visit our website
dnr.wa.gov/foresthealth



Send an email
information@dnr.wa.gov



Call us
360-902-1000



Come in
See addresses at left

dnr.wa.gov/foresthealth

OLYMPIA HEADQUARTERS

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Olympia,
WA 98504-7000
(360) 902-1000

NORTHEAST REGION

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Colville, WA 99114
(509) 684-7474

NORTHWEST REGION

919 N. Township St.
Sedro-Woolley,
WA 98284-9384
(360) 856-3500

PACIFIC CASCADE REGION

601 Bond Rd.
PO Box 280,
Castle Rock,
WA 98611-0280
(360) 577-2025

OLYMPIC REGION

411 Tillicum Lane
Forks, WA 98331-9271
(360) 374-2800

SOUTH PUGET SOUND REGION

950 Farman Ave. N.
Enumclaw,
WA 98022-9282
(360) 825-1631

SOUTHEAST REGION

713 Bowers Rd.
Ellensburg,
WA 98926-9301
(509) 925-8510

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**NATURAL
RESOURCES**

HILARY S. FRANZ
COMMISSIONER OF PUBLIC LANDS

